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THE SPHERE, DECEMBER 29, 1951
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Vol. CCVII, No. 2707
DECEMBER 29, 1951

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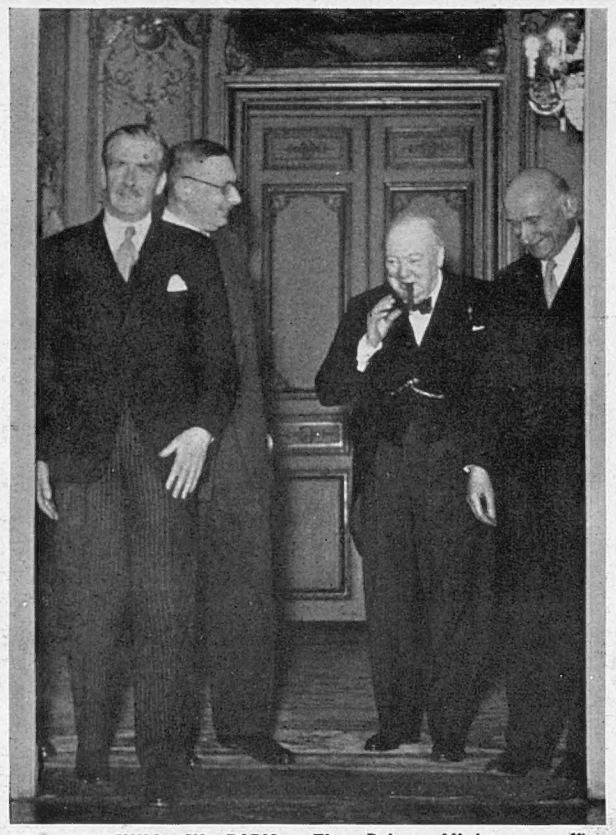
Volume CCVII No. 2707 The SPHERE, London, December 29, 1951

The SPHERE
WITH WHICH IS INCORPORATED "THE GRAPHIC"
THE EMPIRE'S ILLUSTRATED WEEKLY

PISTOL SHOTS IN ST. PAUL'S—MR. P. H. PARKIN, OF THE BUILDING RESEARCH STATION, FIRING A PISTOL FROM THE LECTERN IN ST. PAUL'S CATHEDRAL DURING A DEMONSTRATION OF EXPERIMENTAL AMPLIFYING APPARATUS DESIGNED TO OVERCOME THE WORST DEFECTS OF THE CATHEDRAL'S ACOUSTICS: None of the previous systems of amplification installed in St. Paul's have been completely successful, the long reverberation interval extending over no fewer than twelve seconds.

St. Paul's is trying out a new and elaborate amplification system designed by the Building Research Station in co-operation with Pamphonic Reproducers Ltd. During a test at the Cathedral just before Christmas, it was shown how the reverberation of a pistol shot lasted twelve seconds in ordinary unaided conditions. In addition, the Cathedral authorities were able to hear the new and old systems of aided sound production under test. Under the new system listeners heard a speaker in the pulpit clearly from widely separated points. With this system sound waves from signals picked up in the pulpit were carried to the area beneath the dome through a column of amplifiers standing beside the pulpit, and to distant parts of the cathedral through similar columns placed beside pillars in the nave. Transmissions to the amplifiers in the nave were delayed by recording mechanism in the crypt. The signals from the columns in the nave are timed to coincide with the direct sound waves from the column near the pulpit. The delaying process is carried out by a mechanical recording equipment. Signals are recorded on a disc, and distributed to the amplifiers in the nave by pick-ups arranged in series to allow for the passage of the direct sound waves. These signals are erased with each complete revolution of the disc. During the tests speech reproduction was distinct and of excellent quality. In a statement, the Archdeacon of London said that although the Dean and Chapter had not officially accepted the system they were favourably impressed. Those associated with the provision of the apparatus had produced a revolutionary development in methods of speech reinforcement for great national buildings which were constructed before the science of acoustics was discovered.

Postage—Inland, 2d.; Canada 1½d.; Elsewhere Abroad, 2½d.



MR. CHURCHILL IN PARIS: The Prime Minister, puffing happily at his cigar, seen in company with Mr. Eden, Britain's Foreign Minister, M. Pleven, the French Premier, and M. Schuman, the French Foreign Minister, at the start of the Anglo-French talks in Paris. A statement issued at the end of the visit reaffirmed the British Government's intention of associating themselves closely with the Schuman plan for coal and steel and the Pleven plan for creating a European Army. The British Ministers, it is understood, gave a pledge to maintain armed forces on the Continent of Europe.

THE OPENING IN PARIS OF A CONFERENCE ON NUCLEAR PHYSICS: These are three of the delegates to the conference, which opened on December 17. They are (left to right) Sir George Thomson, of the Imperial College of Science; A. H. Waterfield, Scientific Adviser at the British Embassy; and Professor Werner Heisenberg, of Germany. Twelve nations were represented at the conference, held under the patronage of U.N.E.S.C.O.

DOES THE SPIRIT OF MUSSOLINI SURVIVE IN MODERN ITALY? This is thirty-seven-year-old Luigi Garganese, editor of Rome's ultra-Nationalistic weekly newspaper *Il Popolo d'Italia Nuovo*, which was once owned by Mussolini and which reappeared a few weeks ago for the first time since the end of the war. During a Press Conference, Signor Garganese said that no old Fascist leaders are affiliated with his paper and that "Italy should get back her old colonies." He has already been charged under a law that forbids apologising for Fascism.

A London Newsletter

INGRAM HOUSE, 195-198, STRAND, W.C.2.

To 1952.—Watch them on the road, the years of fate slipping by, streamlined for speed, vague, mud-splashed shapes. There 's 1951—that was! Well, a happy New Year to readers. I think I will not call 1952 a year of fate (as usual). I have always used the term as implying the attainment of some definite, measurable milestone or stage, whether up the road or down. Examples might be a treaty signed, a war ended in some area, a war begun somewhere else, a definite halt to approaching bankruptcy, an economic menace averted or arrived. That vague, mud-splashed shape 1951 brought us a change of Government. I think that comes within the category of fateful events. It is too soon to judge, and when we hear the charming voice of Dr. Dalton judging, we feel again that peculiar irritation which accompanies most of the things which the Doctor says and does. Not that there lacks colour for pessimism and cynicism and petulance. It seems that quantities of those who hailed with relief the return of Churchill expected "2s. 6d. off income-tax within a fortnight," and are beginning to say they were "just as well off under Socialism." Save us from our friends, if our friends are no more realistic than those! But colour for pessimism—of course. If you remember, we began to admit about 1940 that it would take most of what was left of our lives to get us out of the jam we were rushing into. In 1945 we thought we could almost estimate the depth of the jam and make shrewd guesses as to the number of years, decades, generations ahead of us before we got back to normal. Since then normality has ceased to have any meaning relative with its accepted definition. It is normal to be abnormal. It is natural to be up-side down. We have learned to stand on our heads, and would feel strange and awkward the other way up.

here and there advances of a sort have been ma in 1951. Actions, decisions, agreements, no; b peoples so opposed that they would communicate wi each other only with bombs, shells or insults, hav at any rate, agreed to talk in more or less civilis language round the same tables. There is just a hi in the air that in this jungle, which was once a civilis world, the lions and tigers are beginning to get bor with standing on their heads watching the monke and the jackals imitating their curious postures; a may one day realise that a better time could be ha by all in the jungle, if jungle law were once more t rule, and if that rule were gradually a little mo adapted to a new civilisation. The jungle law wou first require that when the lions roar, the monke cease to chatter and the jackals take cover. A a civilising reform of the law would suggest that peaceful redistribution of jungle territory would pr vide more food and more security alike for lions an lizards. Let us hope. Great changes come about b reaction and disillusion. We cannot be "in at th birth," we cannot mark the day of fate in this next year's calendar. A future historian, of cours may be able to do so. To-day, perhaps, was th day of Fate.

Parliament's Failure.—The natur forum of democracy, the source from which you an I should obtain the facts, hear the views and for a judgment about events vitally concerning o national welfare, is Parliament, which is made up o our own chosen representatives. Looking back to th weeks before the Christmas recess, it sticks in m memory that I have never been so shocked by th failure of Parliament on the matters which were the being discussed in Paris, Strasbourg and elsewhere, th vital, burning problems of the defence of Europe, th

THE COLONIAL SECRETARY LOOKS ACROSS INTO CHINA: Mr. Oliver Lyttelton (wearing trilby hat) standing on the Bridge at Lokmachau, on the borders of the British Crown Colony of Hong Kong and China. Police Commissioner Mackintosh is pointing out some of the landmarks. After his short visit to Hong Kong the Colonial Secretary returned to Malaya, which was the main reason for his Far-Eastern trip, and there he outlined some of the possible changes that would be required in waging a successful war against the Malayan guerillas. Mr. Lyttelton arranged to be back in London just before the Christmas holidays

"The Mixture as Before."—1952 opens with "the mixture as before." The cost of living rises, wages rise, the dollar situation and our export-import balance show no marked improvement. There is still less coal, no more food, no sense of returning freedom. There is war in Korea, and the war of words is as sad and costly as the war of lethal weapons there. The talking-shops worked non-stop as the old year drew to a close, and "little Peterkin" cannot be blamed for putting his famous question: "What good came of it at last?" The more so, since his Mother (of Parliaments) took no steps whatever to teach him what it was all about. And the small-nation aggressors triumph into 1952. Not all the pressure of majority opinion in the world, not all the sound advice of Europe-America, the calm patience and restraint of Britain and the expensive movement of troops and evacuations of non-combatants in the Canal Zone have influenced the hotheads or weakened the authority of Nahas; nor in Persia of Mossadek. Aggression seems to have won all down the line. Certainly 1951 was a fatal year, but barely, in my sense, a year of fate. But then, let us recall how difficult it always is to trace the source of a great river, how hard to date the hour of birth of a portent, or to pin the exact point where the endless road turns.

The Painful Inch in the Jungle.—And the trite quotation from Clough, of course, comes seasonably apt again. The tired waves break as vainly as ever and seem to gain no painful inch, but the tide *is* making in creek and inlet. There are little signs that integration of Western Germany, and so on. Whe suddenly the British position was rather airily give out and gave a handle to the protests and shocke surprise of French leaders and of M. Spaak, the surprise was no greater than ours. These "litt matters" had not been worth the attention of ou Parliament; the English were just as entitled as th French and Belgians to rub their eyes, scratch the heads and even to feel a sense of shame. Thereafte outside Parliament, the British case was more care fully put and it began to look less like retreat o deception. And, indeed, we never underrated Britain special commitments. But somebody blundered, an it was a whale of a blunder to spare so little time t discussion and explication of these tremendous pro blems in our own, our only genuine and dependable forum. Let us hope it may never happen quite lik that again. One cause, I doubt not, was that to whic I have already recently referred. With all the talking shops working full blast all over Europe in the sam weeks, it was hard enough to anchor in Westminste even a Junior Minister or two equipped to explain o justify our policies.

Some Groups of Initials.—And now late in the day, the Press is trying to do what Parlia ment did not do, and, being in recess, cannot do. It i marshalling some professors of history to explain to us and bring up to date the tangled web of these multiple talking-shops which have grown out of the first failures of U.N.O., which are known by initials which the public cannot translate and which all ge busy talking in the capitals of Europe in the same

eks. Don't tell me that sixth form boys to-day uld get " 75 per cent. correct " in a general know-ge paper, based on these absurd initials. It makes ite hard reading. As I follow the story, U.N.O. s to be the World's Parliament, but almost at once man threw a veto into the works and thenceforward N.O. merely stuttered loudly. The Western side civilisation had to devise other means to fend for elf, for its military and economic safety, and N.A.T.O. d O.E.E.C. emerged with satellites. N.A.T.O. nted some place where it could translate any wordy reement into plans or even actions and so S.H.A.P.E. ok shape. But S.H.A.P.E. is only one of N.A.T.O.'s rmanent satellites. There are committees of Ministers, Service chiefs, of financial experts and economic perts for ever in session between Washington, ndon, Paris and where not. All this, you may say, vaguely correct or wrong in essential facts. If guely right, it presents a difficult and obtruse and oad subject for the ordinary Englishman's compre-nsion. It is vitally necessary that he should derstand it, and approve or oppose his Government's ndling of it, since a right judgment is the hope of r salvation. But Parliament, now in recess, was ncerned with other matters. Small wonder if we ep our eyes on League football and share the surprise Europe when we hear our own case for the first time.

Alone in Egypt.—We have an Army of less an half a million. Even before the Egyptian uble it was strained and stretched. Conscripts ried out tasks (and very well too) for which they re not originally intended. When the Canal Zone me to be reinforced, we denuded this island of its y garrison, left bare quite a few vital spots in the diterranean and upset the plans and programmes most of our units at home and abroad. How long n we be expected to " stand alone " in the Zone ? any case, we have no *locus standi* after four more ars, and it cannot be said that the situation is likely be solved peaceably before then. The King and emier were never more aggressive, and are entirely moved by the " bluff " of public opinion. The estern Powers and, indeed, the majority of the ited Nations are in no doubt that the stand we ok over the Zone question was right. They are ually sure that they would not risk leaving the nal to the safe-keeping of the Egyptians, who may good assassins but are not very dependable in the ll routine of self-defence. Our Army is very small for immense commitments. We cannot greatly increase though desperate measures are being tried to tempt scripts for short-term regular service. Industry ds them as much and more. The truth is that Egyptian action was as much an aggression as the ean, and all logic and sense demands that the ions of good will should join us in resisting that gression at that vital spot with at least token forces. two things seem clear. The United Nations is apable of deterring any aggressor, however feeble, less it is willing to employ its ultimate sanction of ce as a hint, and the Egyptians in particular are t a little more inclined to hedge and parley after ight of rough stuff than after an orgy of talk.

Priestley Vestments.—Mr. J. B. Priestley no longer a Socialist. Another visit to the U.S. convinced him that he has done with all that. ke all public figures, his public (he thinks) demands at he should explain his position. Well, then. He ver was a member of the Labour Party. He sup-rted them often enough up to 1950 and now has ved a square to the right. Not to the Tory Castle, perhaps to the square of the elusive Liberal Knight. hink the Socialists must regret his defection and the ries be glad. For Priestley is a man of many parts has played them well. His books pay, which ables him to farm at a loss and keep on with his bbies. He is even better as a broadcaster. He is of the very few living Englishmen who probably n't bore you after fifteen-minutes talk on that zz-box. When the subject is politics, his unique nius is even more valuable to his side. For British tesmen (with one or two exceptions) to-day are ling the dinner-bell and the passing-bell of public erest in politics. They have no politics ; they have y party arrows and they can't hit a sitting bull. ere remain plenty of keen, ambitious politicians o would like us to keep an interest in their careers in their game. But unless they all combine—atever their colours—to stop, ban and utterly uidate those ineffable Party Political Broadcasts, shall kick them all into the gutter from which r technique comes and compare their game to ers played by urchins in the same place. Hence B. Priestley is a loss to Labour on the radio, and han't mind if no other party gains by his move. ould much rather hear him on any other topic.

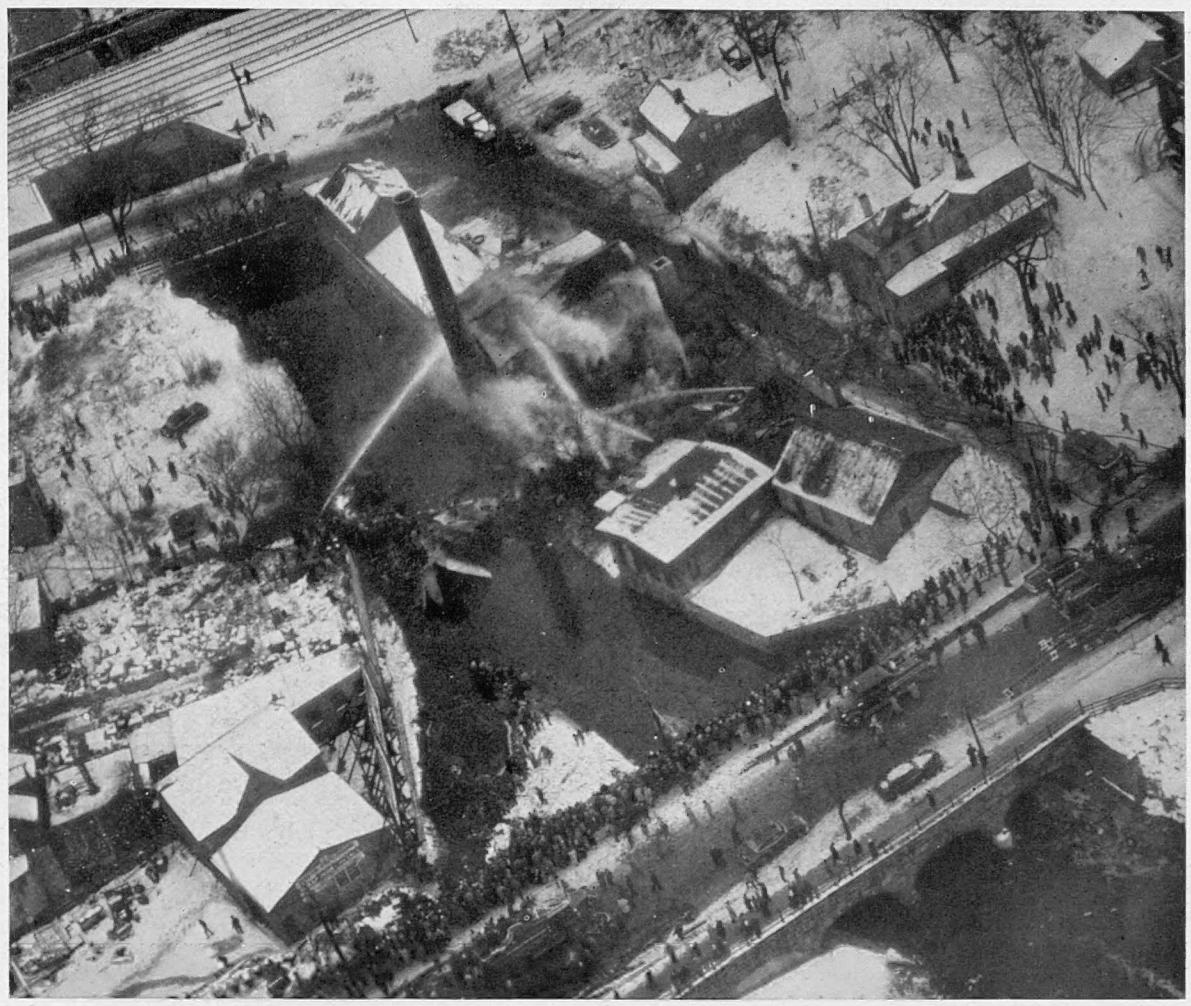
THE OLD STAGER

MOUNT EVEREST

Acknowledgment to " The Times "

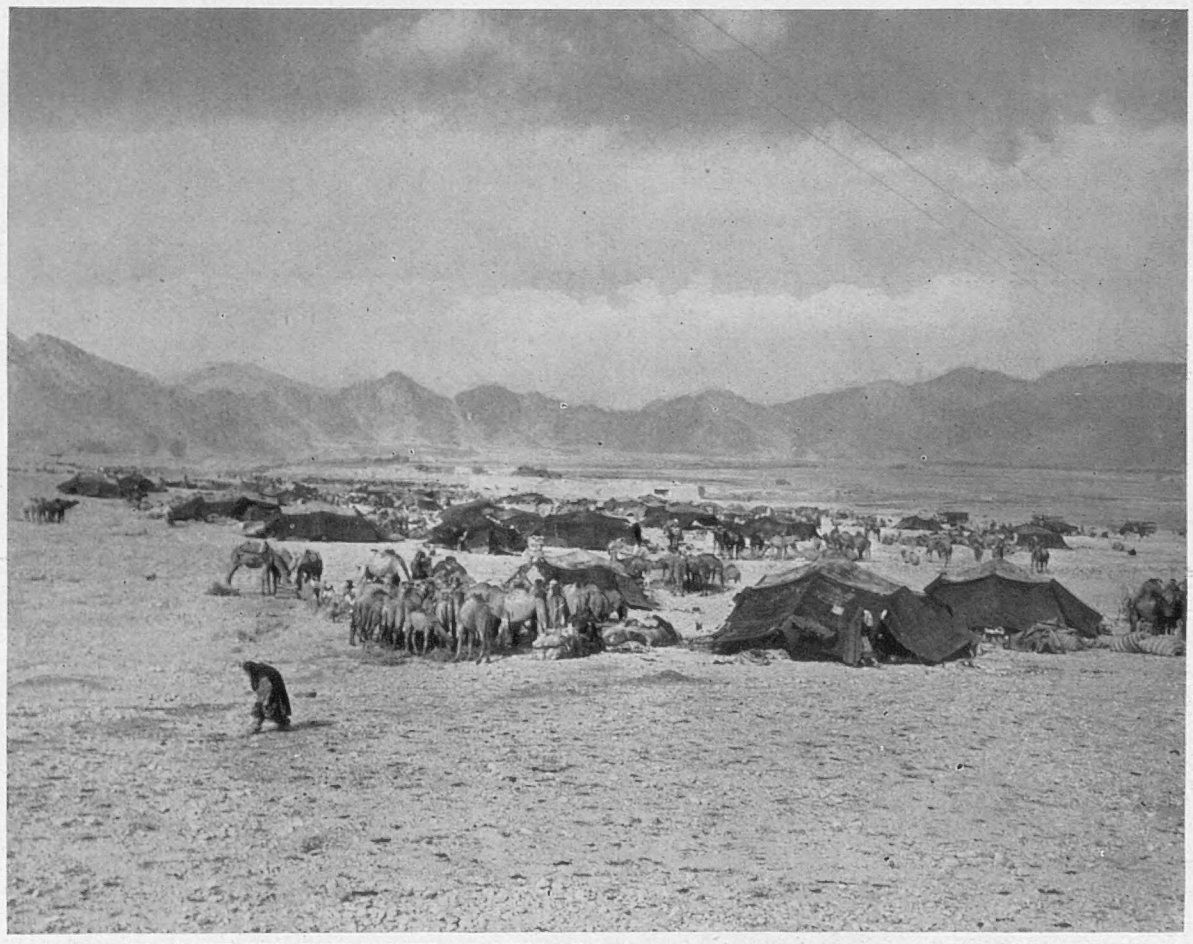
our issue dated December 15, we published an article on the Reconnaissance of Mount Everest Lieut.-Colonel Spencer Chapman, D.S.O. In so far this article gave particulars of the actual experiences the reconnaissance party under Mr. Eric Shipton, was based entirely on copyright reports which have n published in *The Times*. The Editor of THE ERE wishes unreservedly to express his regret that *Times* was not suitably acknowledged as the sole rce, so far as the 1951 Everest Reconnaissance pedition was concerned, of Lieut.-Colonel Spencer pman's information. The route map which accom-ied it was also attributable to *The Times*.

A PRE-CHRISTMAS FLYING TRAGEDY IN NEW JERSEY



AN AERIAL VIEW OF THE SCENE AFTER THE AIRLINER DISASTER IN NEW JERSEY, WHEN FIFTY-THREE PEOPLE LOST THEIR LIVES : The wreckage of the Florida-bound plane, which caught fire and crashed soon after taking off, lies in the shallow Elizabeth River, New Jersey, while firemen direct streams of water on to a warehouse which was set on fire by the blazing wreckage. The two-engined airliner appeared to be turning back to the near-by airport, when a wing buckled and part of it fell off. It crashed instantly and all fifty passengers and the crew of three were killed outright in what was one of the worst disasters in the history of aviation in the United States of America.

WHEN THE AFGHAN NOMADS MOVE INTO THE PLAINS

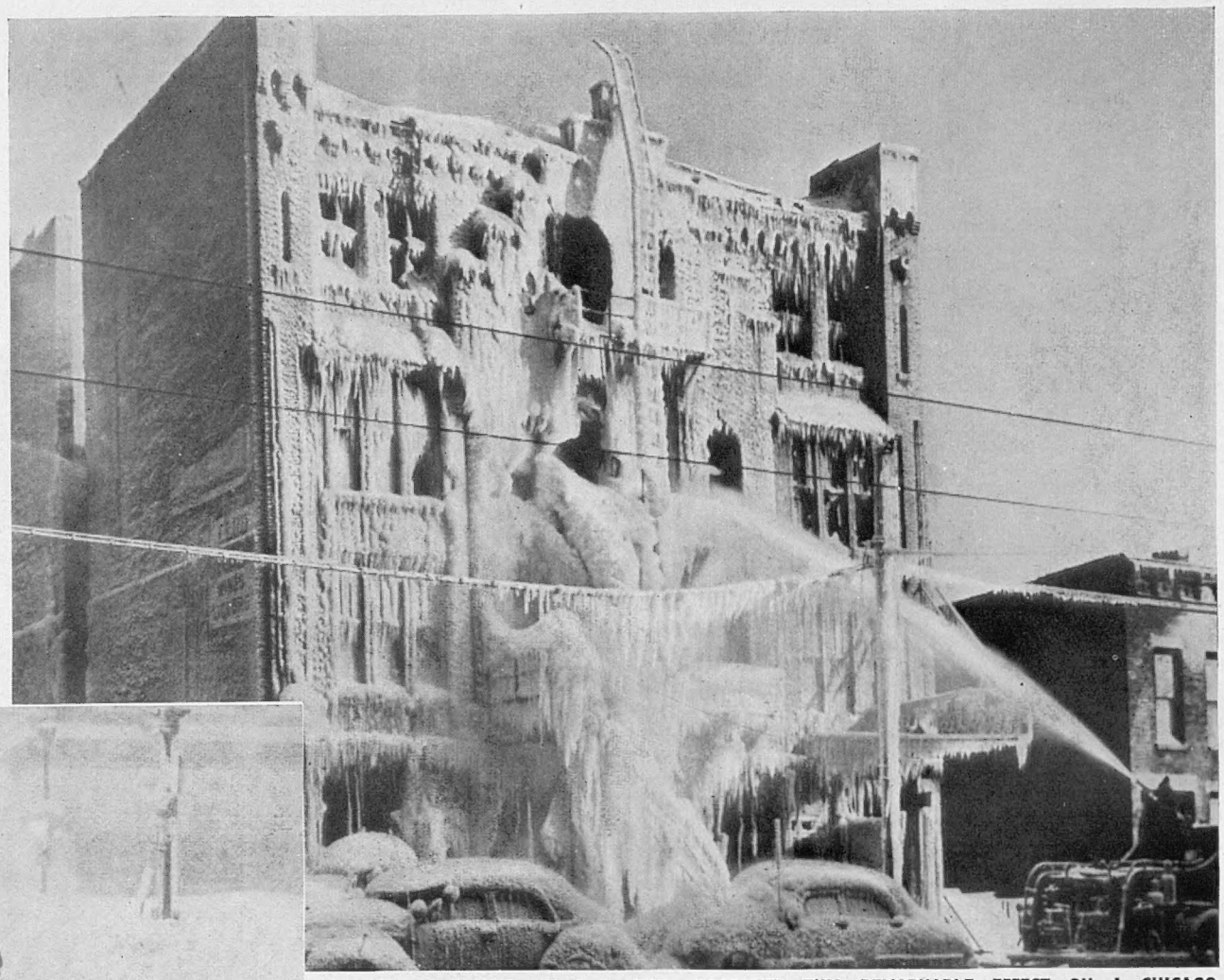


AFGHAN NOMADS MOVE INTO THEIR WINTER QUARTERS : This is part of a huge camp of nomads in the desert outside Dakka, an Afghan Government centre and checking area for the tribesmen moving in and out of the country. From Dakka it is a 15-mile journey to the Khyber Pass and Pakistan. The annual trek of nomads from North Afghanistan into warmer Pakistan for the winter months is at present at its height. Official estimates of the numbers involved in the trek vary from 500,000 to 2,000,000. From the snow-covered and windswept hills of their country these tribesmen jam the approaches to the Khyber with their families, their camels and donkeys, their goats, cattle, chickens and dogs. They live a life of the most incredible poverty and squalor. Ridden with lice and depending almost entirely for food on their stunted herds, the nomads have only their small black tents to protect them from the heat of summer and the chill of winter. For many thousands of years they have lived in this manner—as the ancestors of all civilised peoples must once have lived. Nevertheless, they are a hardy and thrifty people, who mind their own business and usually keep aloof from the settled farmers. But their annual migrations are disturbing to the Governments on both sides of the North-West Frontier. Soon after the partition of India certain elements among the Pathan tribesmen of the North-West Frontier Province, supported openly by Afghanistan and, it is alleged, covertly by India, campaigned for a separate and autonomous Pathan State, which would push the frontier of Pakistan back to the Indus. A cold war between Pakistan and Afghanistan has been irregularly waged around the campaign ever since, and considerable ill-feeling between the two countries continues to flourish. The movement of these nomads adds to the difficulties, while the difficulties themselves have considerably affected the nomads, who can no longer bring down into Pakistan their bales of goods to offer for exchange or sale.

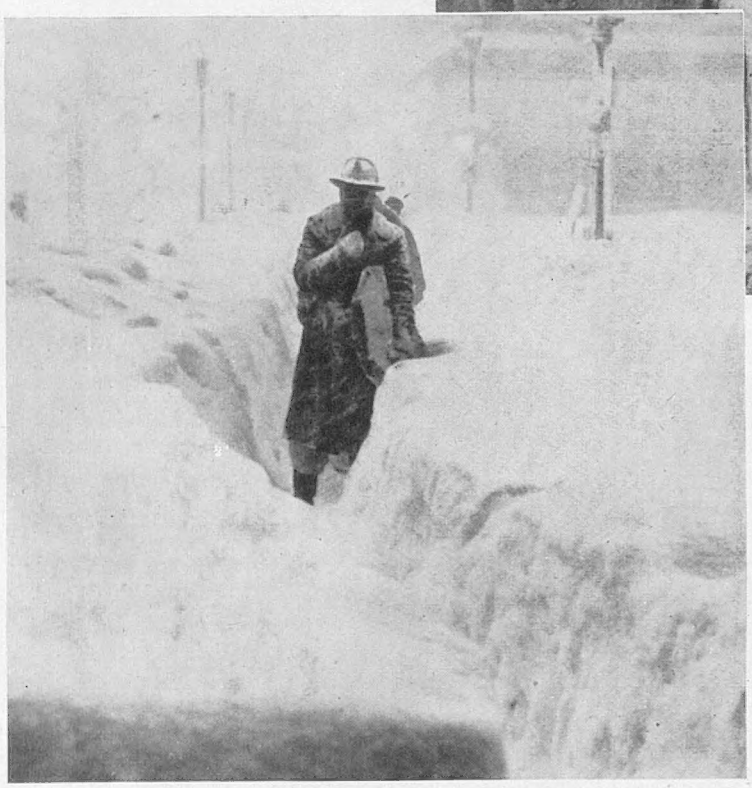
AMERICA BLANKETED IN SNOW AND ICE

Aspects of the Bitter Weather Which Hit the United States on the Eve of Christmas

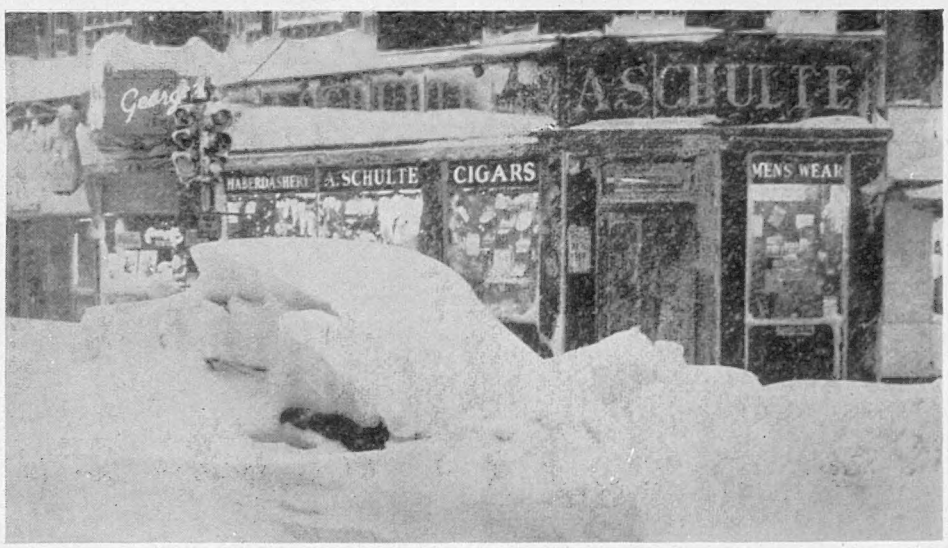
Strong north-west winds ushered a cold wave into New York and the towns and cities of the eastern seaboard of America just before the Christmas holidays, disrupting transport and in places bringing business to a standstill. Cars abandoned by helpless motorists choked many of the main roads in and out of New York. One of the most remarkable pictures came from Chicago, where water from the firemen's hoses froze as it was sprayed on a burning hotel. The blizzard was at its worst in Watertown, New York State, where practically the whole population were confined to their homes. Even venturing across the main square of Watertown in the midst of the blizzard was an act of courage and a high adventure. From the business point of view the blizzard was disastrous, many shops being closed at a time when the Christmas rush was nearing its peak.



SUB-ZERO WEATHER, PLUS A FIRE, PRODUCED THIS REMARKABLE EFFECT ON A CHICAGO BUILDING : The Club Georgia Hotel as it appeared when firemen were playing hoses on the building and the water was turning into sheets of ice before it settled on the walls.

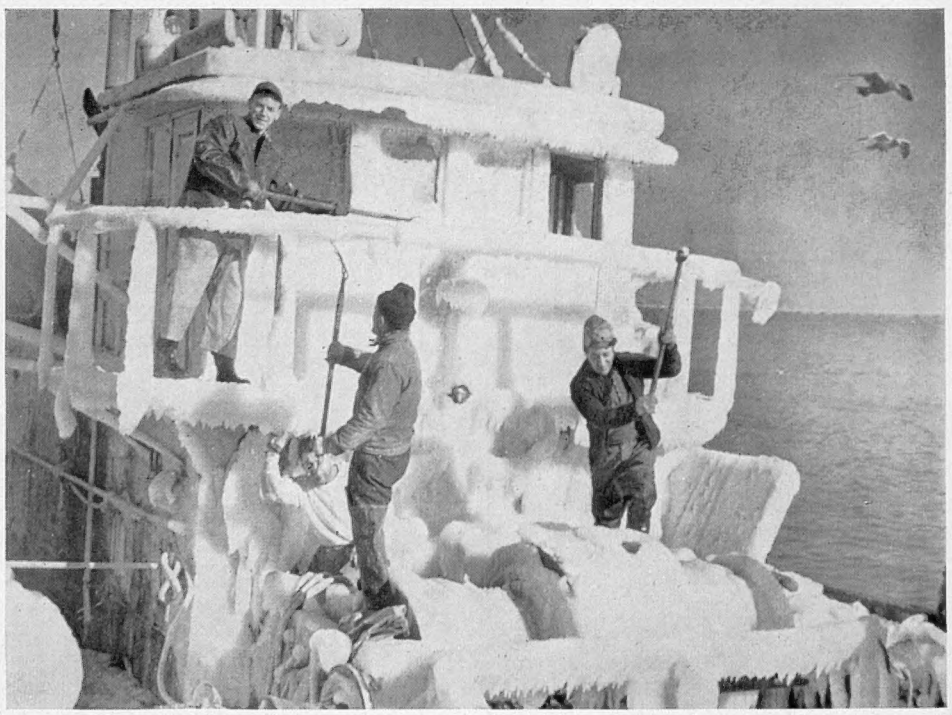


A RESIDENT FIGHTS HIS WAY ACROSS THE CITY'S MAIN SQUARE IN WATERTOWN, NEW YORK STATE : He was battling ahead in the teeth of a blizzard which brought life in the community almost to a standstill in the days before Christmas. The pathway seen in the picture was shovelled out repeatedly, only to fill again with swirling, driving snow.

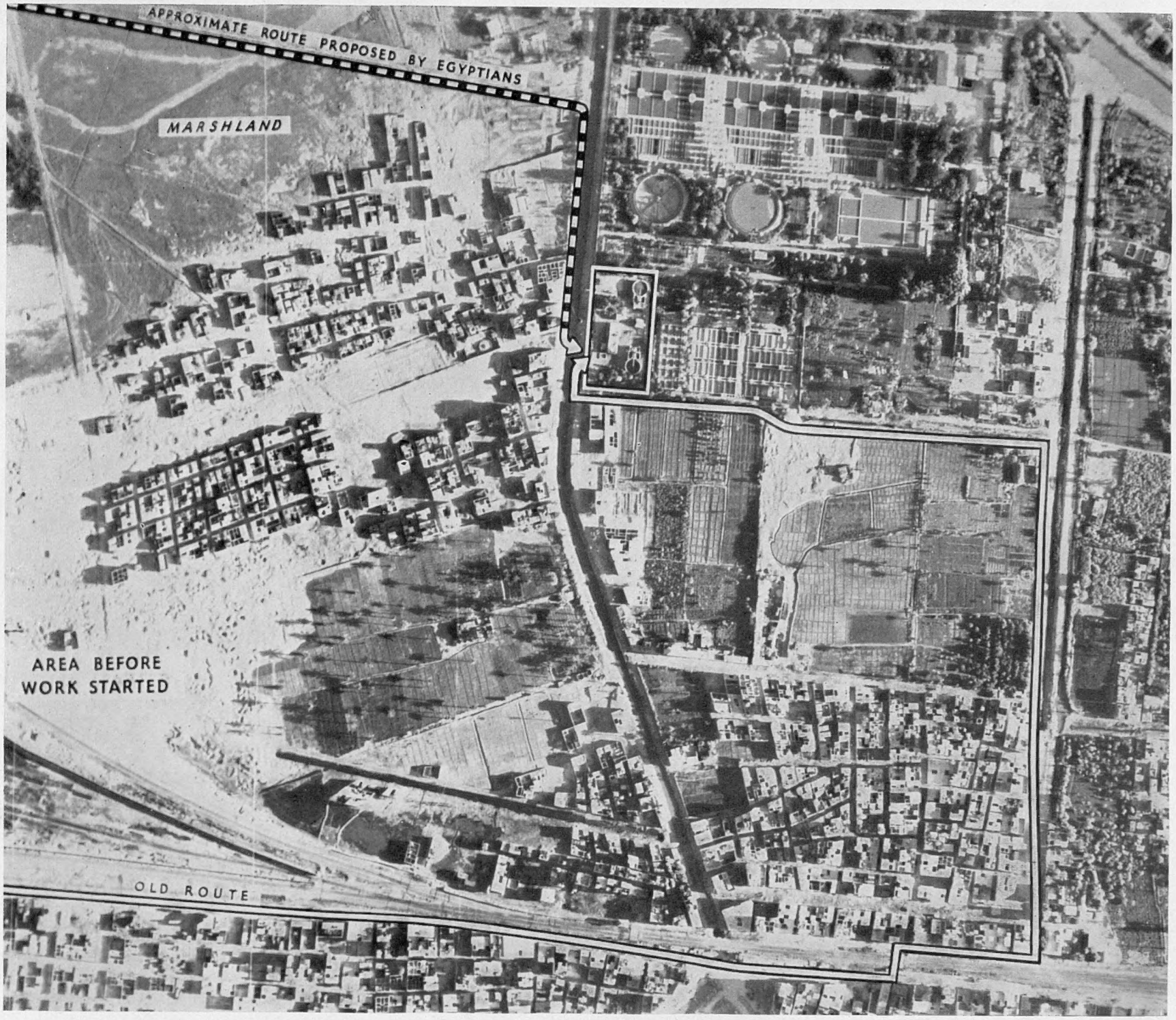


SNOWBOUND IN WATERTOWN : This car and hundreds of others were abandoned by their owners in this city when a blizzard blanketed the streets and houses. Most of the stores in Watertown remained closed because the employees could not get to their work.

PLEASURE WITH BUSINESS—AN AMERICAN WORKER TRAVELS TO THE OFFICE ON SKIS : This is the main square of Watertown, New York, where the only moving vehicle is the Works Department lorry on the right.



SAILORS OF THE AMERICAN TRAWLER "TEXAS" CHOP FROZEN SPRAY FROM THE WINCHES AND PILOT HOUSE OF THEIR VESSEL : The ship was docking at Boston with a catch of 51,000 lb. of haddock, which was kept fresh without difficulty. The ice was picked up during the ship's run from the fishing banks, in the teeth of the east coast blizzard.



AN AERIAL VIEW OF THE DISTRICT AROUND THE WATER FILTRATION PLANT OUTSIDE SUEZ BEFORE THE NEW ROAD WAS BUILT : The picture shows the old route through the slums of Suez, which provided ideal ambush cover for the armed thugs who had almost isolated the British garrison protecting the water plant. Also shown is the route suggested by Egyptian authorities. It led through marshlands where road-building would have been virtually impossible. The problem was resolved when British troops, equipped with Centurion tanks and bulldozers, razed part of the village seen near the marshland in the top left-hand corner and drove a road straight through to the water plant.

THE NEW ROAD AT SUEZ

British Troops Now Have Safe Access to the Vital Water Filtration Plant

On left—

THE NEW ROAD AND BRIDGE RECENTLY CONSTRUCTED BY BRITISH TROOPS : This picture, when compared with the one above, shows clearly the area where a number of Egyptian mud huts were cleared away to make room for the new road and to prevent the surrounding buildings being used for sniping at British road convoys. The new open route to the vital water filtration plant should save many lives, both British and Egyptian. The former inhabitants of the mud houses which were destroyed during the operation are to be compensated by the British Government.

Some Personalities in the Public Ey

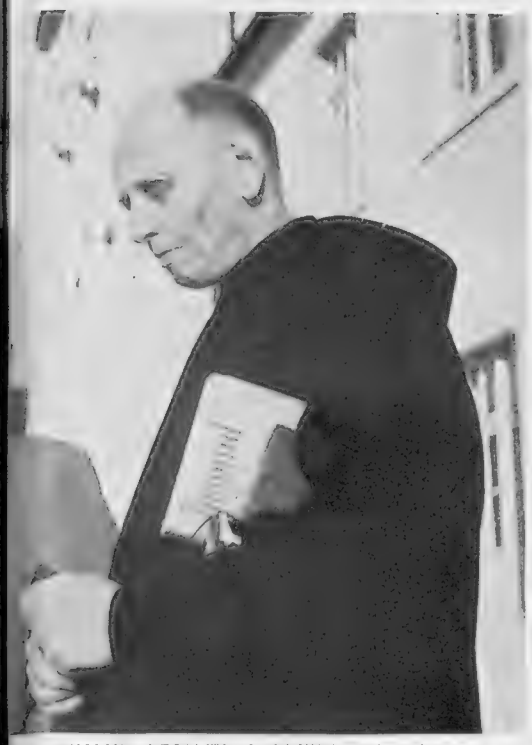
A SERIES OF PICTURES FROM HOME AND OVERSEA

THE NEW FIRST SEA LORD AND CHIEF OF THE NAVAL STAFF : Admiral Sir Rhoderick R. McGrigor, G.C.B., D.S.O., who follows Admiral of the Fleet Lord Fraser of the North Cape. Born on April 12, 1893, Admiral McGrigor, the son of the late Major-General C. R. R. McGrigor, C.B., C.M.G., joined the Navy as a Cadet at the age of twelve-and-a-half. During the First World War he served as First Lieutenant of the destroyer *Foxhound* in the Mediterranean and Red Sea, taking part in the Dardanelles campaign, including the Anzac and Suvla Bay landings. Later he served in the battleship *Malaya* in the Grand Fleet, being present at the Battle of Jutland. In this ship he later served with his present Majesty King George VI, who was then a Lieutenant. After qualifying in torpedoes, he returned to the Grand Fleet as Torpedo Officer of the battleship *Conqueror*. Between the wars he served in the Home, Mediterranean, East Indies and China Fleets, and on the staff of the Tactical School. In September, 1938, he became Chief of Staff to Admiral Sir Percy Noble, Commander-in-Chief, China Station, in which capacity he was serving on the outbreak of war in September, 1939. Returning home in 1940, he took command of H.M.S. *Renown*, flagship of Admiral Sir James Somerville, Flag Officer Commanding Force H, where he took part in the *Bismarck* action, the bombardment of Genoa and many Malta convoys. Promoted to Rear-Admiral in July, 1941, he was appointed to the Board of Admiralty as Assistant Chief of Naval Staff (Weapons); eighteen months later he became Force Commander for the planning and execution of the assaults on Pantellaria and Sicily. After the assault on Sicily he became the Flag Officer, Sicily, where he planned and carried out the assault on Italy. In 1945 he became Vice-Chief of Naval Staff, and in January, 1948, took up appointment as C.-in-C., Home Fleet. He was promoted to the rank of Admiral on September 2, 1948, and became C.-in-C., Plymouth, in March last year.

THE DUKE TURNED BACK TO ACKNOWLEDGE THE CHEERS : The Duke of Edinburgh seen as he made a gesture to the crowd as he arrived for the special service at the Spanish and Portuguese Synagogue at Bevis Marks, in London's East End. The service commemorated the 250th anniversary of the opening of the synagogue.

MR. CHURCHILL PAYS A VISIT TO EISENHOWER'S HEADQUARTERS, ON THE OUTSKIRTS OF PARIS : On the left are Admiral Lemonnier and Air Marshal Saunders. Standing on Mr. Churchill's left hand is General Alfred M. Gruenther. On his way to Supreme Headquarters Mr. Churchill stopped at St. Cloud cemetery to lay a wreath on the tomb of General Georges, who was a personal friend. Fog delayed his drive and it was not until 12.20 that he was greeted by General Eisenhower and his three Chiefs of Staff, General Gruenther, Vice-Admiral Lemonnier and Air Chief Marshal Sir Hugh Saunders. Mr. Eden joined the company a few minutes later. The Prime Minister said how extremely happy he was to be at Supreme Headquarters and to see for himself how this great organisation had grown. He paid a tribute to General Eisenhower as "the one man who could have built up this organisation."

IT WAS A BIG DAY IN PATERSON, NEW JERSEY : Mr. Robert Ammon, of Paris, thirty-six-year-old Turkish-born film producer, and his bride, nineteen-year-old Bridget Farmer, daughter of stage and screen star Gloria Swanson, walking down the aisle of the David Stuart Memorial Chapel, St. Paul's Episcopal Church, Paterson, New Jersey, following their wedding. Gloria Swanson is at present appearing in a Broadway play, *Nina*, with David Niven and Alan Webb. Owing to temporary indisposition (a cold) she was unable to be present at the wedding.



A JOURNALIST BECOMES A PRIEST : Max Jordan, an American news reporter and broadcaster, was ordained a Catholic priest at the Monastery of Beuron, in the Schwaebische Alb mountains in Southern Germany, earlier this month. A European news correspondent of the American National Broadcasting Company since 1931, fifty-six-year-old Father Jordan has been known to American listeners since 1913. He hopes to continue his work as a broadcaster on European affairs.

"MIS ISRAEL" : Miss Michal Harrel has been elected Israel's Beauty Queen in a nation-wide contest sponsored by the Israel women's journal *Ishah*, and judged by a panel of leading Israeli figures in art, stage and fashion. Miss Harrel is now in England on a mission of goodwill.

THE FAMOUS TENNIS STAR MISS GUSSIE MORAN IN SOUTH AUSTRALIA : Miss Moran, who as "Gorgeous Gussie" became even more famous for her lace-edged undies than for her tennis, is seen cuddling a Koala bear—the original "teddy bear" of the nursery—at the Koala bear farm in Adelaide. Miss Moran joined the professional ranks not long after her Wimbledon debut.

PAUL ROBESON PETITIONS THE UNITED NATIONS ON BEHALF OF THE AMERICAN NEGROES : Mr. Robeson (second from left) is seen with members of the delegation he headed which presented a petition at the United Nations Headquarters in New York charging the United States Government with "genocide against the Negro people." Mr. Robeson, who was taken to the offices of Mr. William M. Agar, the Special Service Division Acting Director, said that the petition was presented the same day in Paris, where the United Nations General Assembly was currently in session.

COMMEMORATING THE 5,000TH CONCERT OF THE NEW YORK PHILHARMONIC-SYMPHONY SOCIETY : Mayor Impelliteri presents a plaque to Floyd G. Blair, President of the Philharmonic-Symphony Society at Carnegie Hall. On the right is George Szell, guest conductor of the orchestra during December. The silver and ebony plaque is decorated with the opening two bars of the Beethoven Fifth Symphony, the major work of the first programme of the Philharmonic Society held on December 7, 1842. The inscription on it reads : "Presented by the City of New York—Vincent R. Impelliteri, Mayor—December 13, 1951, Carnegie Hall. In Commemoration of the Five Thousandth Concert of the Philharmonic-Symphony Society of New York—America's oldest Symphony Orchestra—One hundred and tenth season."

KOREA, THE CONTINUING BATTLE

News from the United Nations Armies at the Front and Behind the Lines in the Days Before Christmas

THE COMMANDER OF THE EIGHTH ARMY PAYS A VISIT TO THE COMMONWEALTH DIVISION: General Van Fleet addressing the men when he praised them for their recent actions on the Korean front. In the background on the left is Lieut.-General William Bridgeford, the C.-in-C. of the British Commonwealth troops in Japan and Korea. General Van Fleet has been relaying to all the troops in his command the Christmas greetings of General Ridgway, who has referred to their indomitable courage and their unfailing cheerfulness.

THE VICE-PRESIDENT REPORTS TO THE PRESIDENT ON HIS JOURNEY IN KOREA: Mr. Alben Barkley conferring with Mr. Truman on his return from the theatre of war. Mr. Barkley said that he was still hopeful that a cease-fire would be arranged before the New Year. His visit to the Pacific took him right into the front line in Korea, where he met many of the fighting men. On his return he stopped at Pearl Harbour, Hawaii, taking part in the commemoration of those who died in the Japanese attack.

TRAINING BEHIND THE LINES IN KOREA: A combat infantry squad of the American Army, equipped for instant action, is seen heading for positions in a mock invasion exercise. These are members of the U.S. Army's famous 187th Regimental Combat Team, who have already made two "live" jumps into enemy territory in the Korean War. When this picture was taken they had just landed after parachuting from U.S. Air Force C 119 Flying Boxcars and C 46 Commandos. More than 4,000 paratroopers and 100 aircraft participated in this realistic operation in transportability.

A HOMELY TOUCH FROM PANMUNJOM: A white-gloved North Korean corporal of the guard buttoning up the rain poncho of one of his sentries outside the conference tent, where the Allied and Communist negotiators were hard at work in the days before Christmas, and at least succeeded in breaking their months-long deadlock over some outstanding issues.

WITH CANADIAN TROOPS NEAR THE BATTLE-FRONT IN KOREA: *On left*—Machine-gunners of the Canadian forces in Korea keep a sharp look-out for the enemy from their dug-out. The earthy mound which is their protection against snipers is well-camouflaged with the branches of trees. Beside them, on a ledge, is a dinner-knife and shoe-brush, providing a homely touch. *On right*—Korean road-workers, supervised by a Canadian sapper, engaged on widening a road not far behind the lines.

AMERICA'S EXPERIMENTAL HELICOPTER, POWERED BY A 175-H.P. BOEING XT 50 GAS TURBINE: Mr. William R. Murray, a former pilot of the United States Navy, at the controls of the K 225, which apparently gave a good account of itself in recent trials at Bradley Field, Connecticut. The use of gas turbines for turning the rotor blades in helicopters, autogyros and similar rotating-wing aircraft, is no new idea. Since 1947 the American Helicopter Company has been experimenting with pulse jet-powered helicopters. In these designs the conical pulse jet units are mounted at the extremities of the rotor blades.

AERONAUTICAL NOVELTIES

The Gas-Turbined Helicopter, and the Douglas Skyrocket with its Parent Plane

THE PLANE THAT CONQUERED SPACE AND THE BOMBER WHICH HELPED IT ON ITS WAY—ONE OF THE OUTSTANDING AERIAL ACHIEVEMENTS OF 1951: The rocket-propelled Douglas Skyrocket, which at one and the same time flew at a record altitude and at a record speed after being released from beneath the fuselage of a B 29 bomber, seen with the parent plane shortly after taking off from Edwards Air Force Base, Muroc Dry Lake, Southern California, on one of the record flights. It was afterwards announced by the U.S. Navy that the Skyrocket had travelled at over 1,000 m.p.h. at a height of about twelve miles. The first and second test flights lasted eleven minutes and sixteen minutes respectively. Later in the year it became known that the Skyrocket had reached 1,300 m.p.h. In all, the Douglas Company has built three Skyrockets, but it is the model depicted here—a model with its turbojet unit removed—which has been breaking the records.

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AMERICA IN THE TOILS OF THE ROARING 'FIFTIES

AND OTHER FOREIGN NEWS IN PICTURES

The Tax Scandals—The Hollywood Shooting—Tallulah Bankhead Gives Evidence

THOMAS MURPHY IN WASHINGTON: The Federal Judge, whom the American Press was hailing last week as the man who would fight the income-tax scandals on behalf of the Truman Administration.

A VICTIM OF McCARTHYISM: Mr. John Stewart Service, who has been dismissed from the State Department in Washington, D.C., owing to the existence of "reasonable doubt as to his loyalty."

A CENTRAL FIGURE IN THE TAX SCANDAL: Frank Nathan giving evidence in Washington during the House of Representatives inquiry into the activities of tax officials, many of whom are revealed as corrupt.

TREASON AND CORRUPTION IN HIGH PLACES.—President Truman's second Administration has been fraught with internal problems, and they have centred round two main themes—treason and corruption. The first of them to become world news was the allegation that the State Department was riddled with Communist sympathisers, and it became the mission of hard-hitting and irresponsible Senator McCarthy, Republican Senator for Wisconsin, to denounce these back-sliding politicians to the nation. His latest scalp is John Stewart Service, who is dismissed his post because there is "reasonable doubt as to his loyalty." For Mr. Service it means the end of a promising career in the American Foreign Office, but for years to come there must be many who will believe that he is the victim of one serious indiscretion, an indiscretion which he freely admits. The indiscretion he committed was to lend to Mr. Philip Jaffe, the editor of *Amerasia*, copies of reports he had made on visits to Yenan and on talks he had had with Chinese Communist leaders. He was introduced to Mr. Jaffe by a naval officer a few days after he returned from China in April 1945, and was unaware that the newspaper, its editor and staff, and the naval officer were being investigated by the F.B.I. Nobody apparently had warned Mr. Service that *Amerasia* was under suspicion and, as one of his jobs in China had been to give the correspondents background information, he readily did the same on his return to Washington when asked to see the editor of a magazine devoted to Asian affairs, of whose link with the Communist Party he was not aware. It was in lending Mr. Jaffe copies of documents that were classified that he committed an indiscretion—and a serious one.

The corruption allegations are no less wide-ranging than the treason allegations, and if anything they are of even more serious import for Mr. Truman's Administration, which is in danger of closing its days under the shadow of deep public distrust. The President, on his return from the Winter White House at Key West, promised a complete investigation of the income-tax frauds, and probably by the time these notes appear in print he will already have announced his plans, including possibly the appointment of Federal Judge Murphy to lead the investigation. The history of political corruption in the United States has many chapter headings: the Whisky Ring with its Liquor Tax Evasion under Grant, the Star Route Frauds involving stage-coach mail contracts under Garfield, and the Teapot Dome Scandal involving lease of Government oil lands under Harding, but none of these, it seems, outdo the present income-tax frauds in extent. For about a year there have been reports of "irregularities" involving income-tax collection and enforcement. Now they have come to a head.

(*Continued above, on right*)

CHARGED WITH FORGERY AND GRAND LARCENY: Mrs. Evyleen Cronin, Miss Tallulah Bankhead's former maid.

TEMPESTUOUS TALLULAH LEAVES THE NEW YORK SESSIONS COURT IN A SNOWSTORM: Miss Bankhead had been giving evidence in the trial for forgery and grand larceny of Mrs. Evyleen Cronin, her former maid.

PRIVATE LIVES IN A NEW YORK COURT.—If America has been rocked by the tax scandals, it has been shocked by the New York trial of Mrs. Evyleen Cronin, and probably members of the legal fraternity all over the world have been both shocked and surprised by the sort of tactics allegedly employed in court. Mrs. Cronin has been accused of raising the figures on cheques signed by Miss Bankhead, the alleged thefts amounting to over 4,000 dollars in New York County alone. She has admitted raising the figures, but one point made in defence was that Mrs. Cronin felt she had no option in the matter as she was beaten unmercifully and at least fifty times when she went to the actress for money. A gasp of shocked protest was heard in court from Miss Bankhead when this allegation was made, and she was heard to remark in an aside, "The next thing they will have me doing is vivisecting my dog without an anæsthetic." Miss Bankhead was on one occasion ordered from the court in the early stages of the trial.

A JOLLY GATHERING AT EL MOROCCO: In this picture, taken several months ago at the New York night club, are gathered three of the participants involved in the news of the recent Hollywood shooting. On the left is film producer Walter Wanger with Joan Bennett, his wife, beside him. On the right is Jennings Lang, the actor's agent, with Joan Bennett's sister Barbara seated beside him. Wanger shot Lang in the leg during a recent stormy encounter.

CHRISTMAS TIDINGS FROM CALIFORNIA'S PROMISED LAND.—The news of the shooting of Jennings Lang by Walter Wanger, the fifty-seven-year-old producer, conformed to the recent pattern of events in Hollywood, where nerves are overstrained and bank balances are at a lower ebb than in decades gone by. As usual, all the participants in this affair began to emerge in public in dark glasses after the shooting. Walter Wanger has apparently slipped from wealth to heavy debt in a very short space of time, mainly, it is said, through the failure of *Joan of Arc*, the film which he made with Ingrid Bergman, which cost millions of dollars, but proved one of Hollywood's big box-office flops.

TALLULAH BANKHEAD TELLS THE NEWSMEN: The blonde stage and radio star protesting over the treatment she had received in court. She told the Press that she was absolutely disgusted with the tactics of State Senator Fred G. Moritt, attorney for Mrs. Cronin, her former maid.

CATHOLIC PRIESTS FROM CHINA: *On left*—Father Alceo Emaldi, an Italian Missionary who slashed his tongue with a razor so that he could not reveal the names of Chinese Catholics to the Communists even under torture. *On right*—The American Father Mark Tennien, who was allowed by Communists to buy a ticket for Hong Kong because they believed he was about to die.

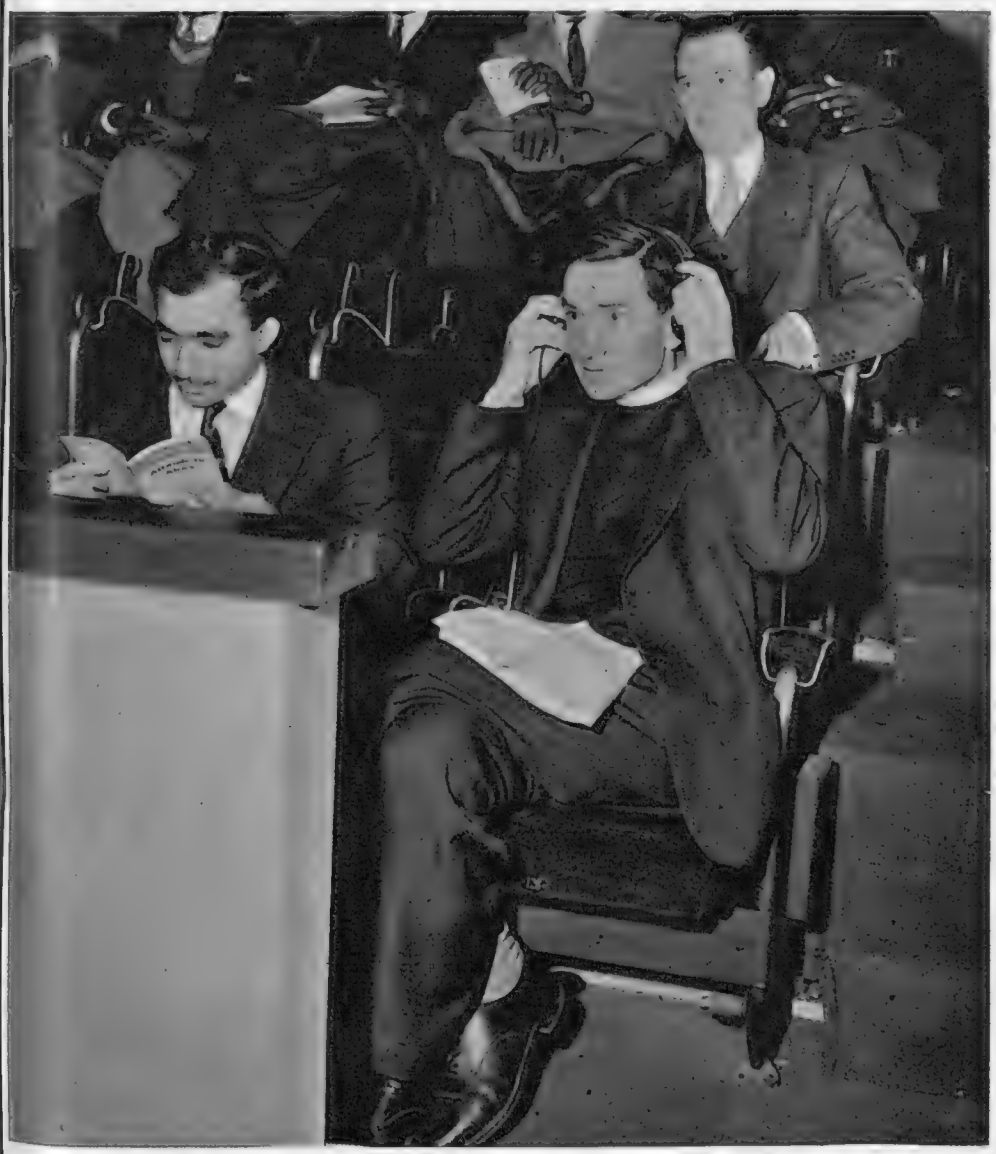
AMERICAN NUNS RETURN FROM COMMUNIST CHINA: They are Sister Marie Ignatia (left) of Dover, U.S.A., and Sister Angela Marie, of Ontario, Canada. They managed to obtain exit permits from China.

AFTERMATH OF A REVOLUTION.—The wave of terror and brutality that so often follows in the wake of revolution has barely begun to recede in Communist China. It is believed that hundreds of thousands of Chinese were slaughtered, many of them the victims of local feuds having little or no connection with politics. Outside Hong Kong there can have been few colonies of Europeans left in the country, but here and there little groups of nuns and missionaries, many of whom had served China for years, remained steadfastly at their posts. On these the full fury of the new China fell. Recently all the world was horrified at the fate of the nuns who, it was alleged, had "murdered thousands of Chinese children." Priests and nuns alike were imprisoned and ill-treated for no other reason than that they were helpless and foreigners.

CHINESE COURT PROCEDURE: This is Father T. S. Langley, an American missionary, showing how he was forced to kneel for four-and-a-half hours during his "trial" by the Communists in China.

ARCHBISHOP STEPINAC OF YUGOSLAVIA AFTER HIS RELEASE FROM PRISON: The Archbishop, in cassock and cloak, is seen standing in the doorway of the Parish Church of Krasnic, his native village. Unless he gets permission he must stay at Krasnic for the remaining eleven years of his sixteen-year prison sentence. Under the terms of his release he may act only as a parish priest and must forget that he was, and from the Vatican's point of view still is, Archbishop of Zagreb. He may wear his ring, cross and robes only in private.

THE CHURCH IN YUGOSLAVIA.—The release from prison of Archbishop Stepinac, Primate of Yugoslavia, may well have resulted from American pressure and from a belief that increased material assistance from the West would follow. The Slovenian, predominantly Catholic, part of Marshal Tito's Communist Republic renewed their attack on the Vatican at the time of the Archbishop's release, and it may be that only the watertight theology of the Roman Church has prevented Yugoslavian Catholics breaking away from Rome—at least officially. The Vatican, however, is by no means pacified by the Archbishop's release and is demanding that he must be allowed to resume his full status. Archbishop Stepinac himself says that while his future lies entirely in the hands of the Pope, it is a matter of indifference to him whether he remains at Krasnic. "If necessary," he said recently at Krasnic, "I shall stay here until my death."



THE REV. MICHAEL SCOTT AT A MEETING OF THE UNITED NATIONS TRUSTEESHIP COMMITTEE: Mr. Scott, seen adjusting his earphones, has persuaded the Committee to invite leaders of the South African Herero Tribe to Paris, where they would appear before the Committee in connection with the disputed territories of South-West Africa. Dr. Malan, the Prime Minister of South Africa, announced that his delegation would be withdrawn in protest.

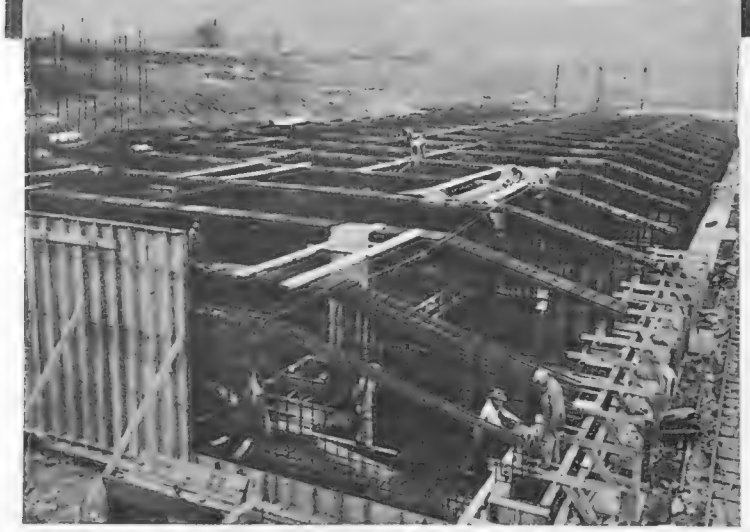
COLOURED AFRICA PLEADS FOR A FAIR DEAL: Sylvanus Olympio (centre), from French Togoland, Africa, addresses a recent session of the United Nations Trusteeship Committee. With him are Dr. Martin Aku (left), also from French Togoland, and Senyo G. Antor (right), of British Togoland. All three are delegates of the Ewe people and pleaded before the Committee for the unified administration of their tribe, which is at present divided under British and French rule.

THE GROWING CHALLENGE OF AFRICA.—Unlike the peoples of India and Pakistan, of Persia, Egypt and Morocco, the millions of black Africans ruled by white minorities have no ancient heritage of civilisation to flavour their young and unorganised expressions of nationalism. But the feeling is there, slowly flourishing and strengthening into what might well become a serious challenge on the continent to white supremacy. Already the United Nations has decided against Dr. Malan in the matter of the disputed territory of South-West Africa. The history of this problem goes back some years. In 1947 South Africa informed the United Nations that she intended to incorporate the mandated territories of South-West Africa. This was opposed by the General Assembly, where the smaller countries were able for once to exercise their concerted strength. At the present session of the United Nations in Paris the Trusteeship Committee appealed to South Africa to resume negotiations on the problem, but because the Committee had decided to give a hearing to tribal representatives from the mandated territories South Africa at once withdrew her delegation in protest. Meanwhile, the Rev. Michael Scott, a lonely and heroic figure, has continued to plead for his coloured friends to the peoples of the world. In Britain, certainly, he has won considerable admiration and sympathy.

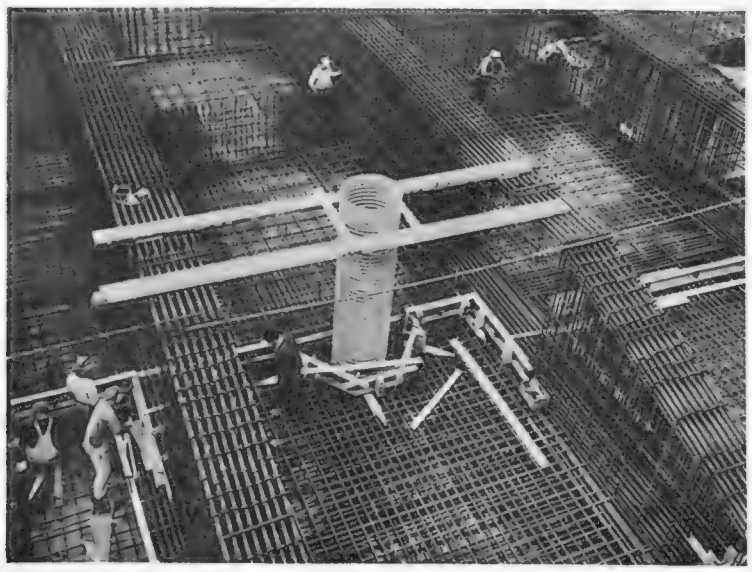
AT GRASSY POINT, ON THE WEST BANK OF THE HUDSON RIVER, THIRTY-FIVE MILES FROM NEW YORK, ENGINEERS ARE CONSTRUCTING THE SUBSTRUCTURE OF NEW YORK'S MULBERRY PIER: The pier will be formed by three 350-ft.-long concrete boxes, which will in due course be floated down the river and, when over the prepared site, they will be sunk there. They will replace the old Pier 57, which was destroyed by fire in September, 1947. Above the substructure will rise a superstructure which will be added on the spot. The pier is being built in order to accommodate the vessels of the Grace Line.

Building New York's Mulberry Pier

THE SUBSTRUCTURE UNDER CONSTRUCTION THIRTY-FIVE MILES FROM NEW YORK



ONE OF THE THREE REINFORCED CONCRETE BOXES WHICH WILL FORM THE SUBSTRUCTURE OF NEW YORK'S MULBERRY PIER: *Above*—The steel reinforcing is seen being put into position before the start of pouring operations. *Below*—A close-up of the maze of reinforcing.



THE MODEL OF NEW YORK'S MULBERRY PIER WHICH WILL ACCOMMODATE THE SHIPS OF THE GRACE LINE: From left to right are: Marvin H. Leghtman, Deputy Commissioner of New York's Department of Marine and Aviation; Cassius Mallory, Vice-President of the Grace Line; Captain Praeger, designer of the pier; and Commissioner Edward F. Cavanagh, Jnr.

HOMEWARD-BOUND FROM KOREA FOR CHRISTMAS AND THE NEW YEAR: The aircraft-carrier H.M.S. *Warrior*, her flight-deck crammed with stores, cars and aircraft from the Far East, seen in Malta Harbour after her arrival from the Far East. She was on the way home to Portsmouth, where the ship's company could expect to be granted Christmas and New Year leave. On board the *Warrior* were Army personnel from Korea. The *Warrior*, displacing 13,190 tons, is one of the six ships of the Glory class. In 1948 *Warrior* was fitted with a flexible landing-deck for operating jet fighters with skids instead of the conventional surface under-carriage with wheels, making for safer landings of fast aircraft within limited space. H.M.S. *Warrior* was completed by Harland and Wolff in 1946.

A WARSHIP WITH A CHRISTMAS MISSION: The minelayer H.M.S. *Manxman* seen at Malta where she arrived recently with Christmas trees for the warships of the Mediterranean Fleet. She has recently been doing duty at Port Said and Suez. The *Manxman* belongs to the Fast Minelayer class, and she is credited with a top speed of 40 knots. Her sister-ships are the *Apollo* and *Ariadne*. War losses in this speedy class were heavy.

MALTA DAYS

BRITISH AND AMERICAN WARSHIPS AT THE GEORGE CROSS ISLAND

On left—
THE UNITED STATES DESTROYER "PUTNAM" LIMPS INTO MALTA HARBOUR: The warship seen in Grand Harbour with the U.S. cruiser *Des Moines* in the background. The *Des Moines* is the flagship of the U.S. Sixth Fleet. The *Putnam* had just arrived from Palermo, Sicily, having sustained damage to one of her propellers. The United States Sixth Fleet is now a real power in Mediterranean waters, and the Americans have claimed that if war came to the Middle East now the Sixth Fleet could keep open the sea lanes from Gibraltar to the Syrian shore.

A TIGHT-ROPE WALK BY ONE OF AMLETTO SCIPLINI'S CHIMPANZEES: This is one of the more hilarious acts in the 1951-52 Bertram Mills Circus at Olympia, which, as usual, contains a number of old favourites and a host of new ingredients to make it one of the most popular London shows of the holiday season. Sciplini claims that he knows exactly what a chimp wants, and that chimps understand exactly what he says. He was born at Bagnara, Italy, and points out that this lies between Stromboli and Etna, so he knows all about volcanoes and is well fitted to understand his exuberant troupe. Sciplini spent a great part of his childhood in Africa.

THRILLS OF THE OLYMPIA CIRCUS

SOME MAJOR ACTS IN THE BERTRAM MILLS SHOW

THE CLOWNS MAKE UP FOR THE GRAND ENTRY: Little Billy, Johnny Staffund, Alby Austin and Percy Huxter in their dressing-room at Olympia. They are assisted by other clowns and augustes, each of them master of some particular phase of this traditional entertainment.

KNIE'S MIXED TROUPE OF LIONS AND TIGERS: This spectacular act within the cage is presented by Vojtech Trubka, who has been described as the best animal trainer in the world. These lions and tigers have been one of the features of the Swiss circus, of which Freddy Knie is part-owner.

TAKING PART IN FREDDY KNIE'S LIBERTY ACT : One of the superbly graceful horses leaps in and out of a crown set within the sawdust ring beneath the Big Top.

THE SANTIAGOS PERFORM THEIR FEATS OF DARING : This act, described as acrobatics in mid-air, takes place above a canvas net, but, even so, it provides some truly breath-taking moments for the audience. The Santiagos are Italians. Carlo, who is the senior member, made his first appearance in the ring at Constantinople.

On left—ROARING ROUND THE CIRCUS : In this act Johnny's teddy bears dance, ride scooters, seesaw and motor-cycle, and their antics with the dog, who is put into a sausage machine, emerging unscathed, are hard to believe.

GOSTA KRUSE AND HIS SIX ELEPHANTS : This elephant trainer is a twenty-four-year-old Swede and he is said to be the youngest member of the elephant-training profession. Kruse was taught by his father, a horse trainer, and became an assistant trainer at the age of sixteen. For a while he worked with sea-lions, but he says he finds more pleasure in elephant training. His is one of the most dignified and graceful acts in the whole Olympia repertoire.

THE DE HAVILLAND COMET AT THE CROSSROADS OF AFRICA—THE GREAT JET AIRLINER SEEN ABOVE LIVINGSTONE AIRPORT, NORTHERN RHODESIA, DURING TOUR NO. 7, ONE OF THE SERIES OF OVERSEAS PROVING FLIGHTS MADE IN THE COURSE OF 1951. On this flight of 13,285 miles the Comet went as far south as Johannesburg. The airliner aroused intense interest at every one of the thirty-one overseas airports visited during these tours, which have been a necessary preliminary to its going into service on the world's major skyways. This drawing, specially made for *The Sphere* by Gordon Nicoll, shows (foreground on right) the control tower of Livingstone Airport.

THE COMET BESTRIDES THE WORLD

The Story of the De Havilland Jet Airliner which in 1952 Comes into Service on the Skyways, Setting New Standards in Aerial Travel

BY A SPECIAL AERONAUTICAL CORRESPONDENT

OFFICIAL PHOTOGRAPHS; AND SPECIAL DRAWINGS BY LAURENCE DUNN, GORDON NICOLL AND LESLIE S. HAYWOOD

To-day, on the brink of 1952, six years after the most destructive war in history, Great Britain grasps an opportunity the like of which she has not known since the days of Elizabeth, when she gained the mastery of the seas. This time the prize is none other than leadership in the air, in the creation of the great merchant fleets which are beginning to link the nations ever more closely in a shrinking world, a world with an entirely new time-space concept. In the forefront of this remarkable development is the Comet airliner, the first pure jet-propelled airliner to be ready to fly a regular commercial schedule, and in the next few years it will be bestriding the continents and the oceans not only in the service of Britain, but of other nations, such as France and Canada, which have already seen the virtues of this new aircraft. In the following article a special aeronautical correspondent of THE SPHERE *tells the story of the Comet and how it came into being, how it emerged from its searching tests in triumph, and how it now stands ready to form the basis of a vigorous merchant air service. With this merchant fleet, he concludes, we are entering perhaps upon the Elizabethan age of flying.*

THE Comet jet airliner made its first impact on the news in July 1949. From the first the project had been shrouded in secrecy and no hint of the performance, the date of completion or even the shape which the aircraft would take had been allowed to leak out. It came, therefore, as something of a shock, even to those closely connected with the industry, when the de Havilland Aircraft Company announced that the Comet had made a successful first flight at Hatfield Aerodrome on July 27, 1949, well within three years of the start of the design work.

Here apparently was something which stirred the pride of the Englishman, who had become acutely conscious that Great Britain was far behind America in the building of an aerial merchant fleet. Forced by the stark necessity of survival during the war to concentrate on fighters and bombers, we in this country had to rely almost entirely on the greater productive capacity of the United States to provide the transports which played so prominent a part in the latter stages of the war. As a consequence, the British aircraft industry found itself in 1945 not only unable to compete in the world market for airliners but having to rely almost entirely on the highly-developed American equipment for its own national airline.

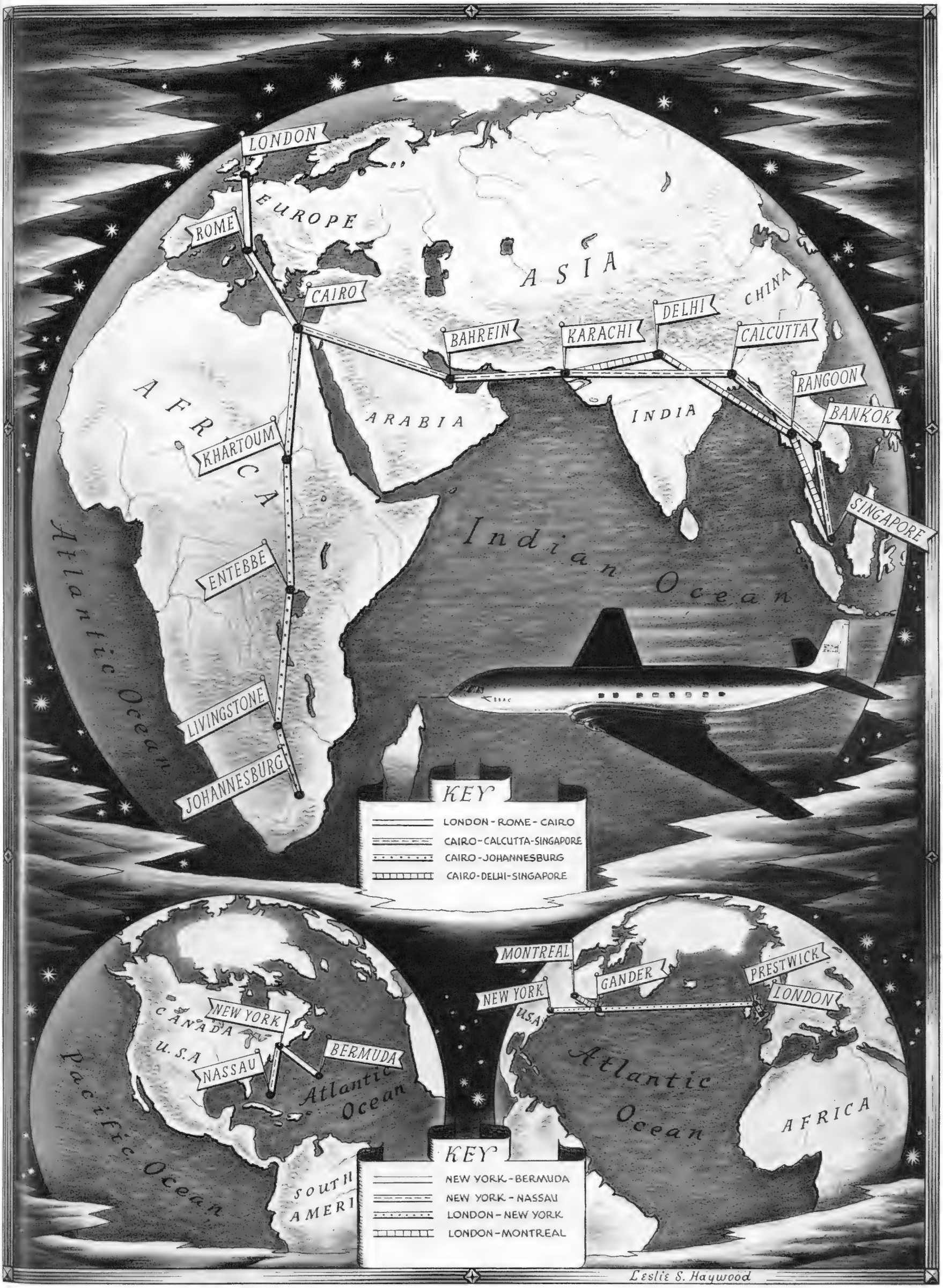
THE MAN WHO HAS GUIDED THE COMET THROUGH HER TRIALS: Group-Captain John Cunningham, D.S.O., D.F.C., the night-fighter ace of the Second World War, waving from the doorway of a Comet airliner. He first took the Comet into the air on his birthday, July 27, 1949, and he has since been responsible for its development and test flying. Group-Captain Cunningham was recently awarded the O.B.E. in recognition of his services to British aviation.

But this situation, deplorable as it was, had its compensations. The very fact that British manufacturers had no big transport aircraft on the stocks enabled them to take a completely fresh view of the possibilities. The very cleanness of our drawing-boards gave encouragement to start on new designs. We were not saddled with an unharvested investment as the Americans were.

It would have been useless then for British builders to have embarked on aircraft little if anything in advance of current American airliners. The delay of up to six years which must elapse before new commercial aircraft can be put in service would have meant that America could easily retain its substantial technical lead. Something startling had to be achieved if Great Britain was to recapture a leading position. Fortunately, Great Britain had at hand the jet engine: developed intensively in the later war years, British technique had established a commanding lead in this field, and indeed it was from data supplied by this country that the first jet engines were built in America. This lead has been maintained and even to-day the newer gas turbine jet engines of British design are being produced in American factories.

In 1945 the future of the jet engine for civil aircraft was fraught with uncertainty. The engine was enormously powerful compared with piston engines of even double its weight, but the fuel consumption was high. Although early work with jet fighters held out promise of excellent reliability, operational experience was not extensive as yet. The jet engine, for maximum efficiency, demands a fast, high-flying aircraft, and the problems associated with the design of airliners to fly at eight miles a minute and eight miles above the earth were at that time largely unexplored. Small wonder, then, that most experts, particularly in America, were inclined to the belief that for civil aircraft at least the jet age had not yet arrived.

(*Continued on page 528*)



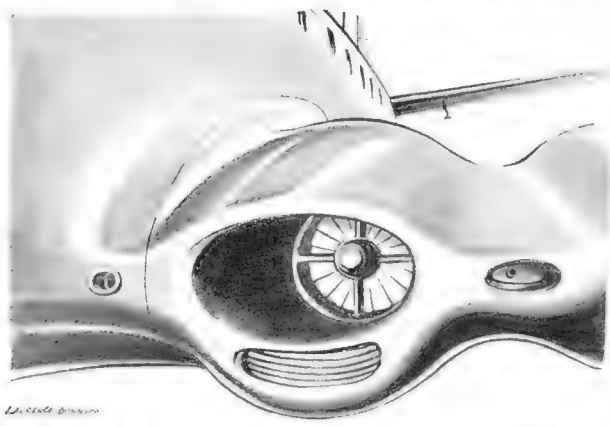
THIS SHRINKING GLOBE

Some of the Routes the Comet Airliner Will Fly

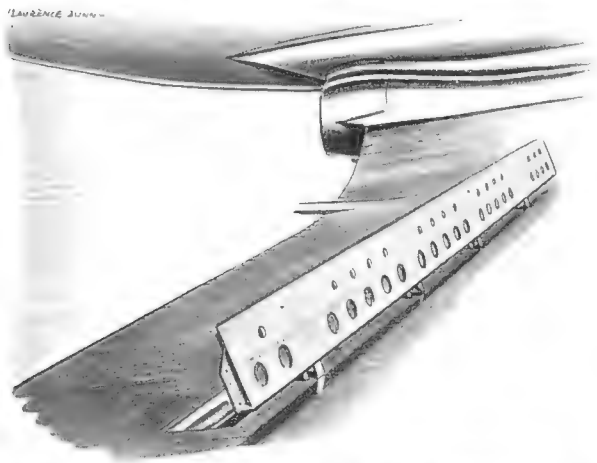
In 1952 the Comet will be winging its way across Europe and the Mediterranean on the first of its scheduled routes to Cairo via Rome. Later those flights to the Near East will be extended southwards to Johannesburg and east to Singapore. Within about a year and a half B.O.A.C. will also be flying the Comets between New York and Bermuda and New York and Nassau. Within two or three years, the long-range Avon Comet will probably be operating the B.O.A.C. services across the North Atlantic between Britain and the United States. In this special *Sphere* sketch-map Leslie S. Haywood shows some of these projected routes across "the shrinking globe." On several occasions the Comet has flown from London to Cairo in a little over five hours, as compared with an existing flight time of ten hours.

The Comet Bestrides the World

(*Continued from page 526*)



THE MOUTH OF ONE OF THE JETS : This close-up, drawn for "The Sphere" by Laurence Dunn, shows one of the wing roots of the Comet and the clean, streamlined shape of the mouth of the jet. Hinged panels below the wings expose the whole engine installation for easy servicing from the ground. The engine installation is split into three temperature zones, each zone being separated by fireproof bulkheads to ensure maximum safety.



LOOKING ALONG THE TRAILING EDGE OF THE COMET'S STARBOARD WING : This view, facing the fuselage, shows the jet outlets and air brakes. The Comet, having no propellers (which form valuable air brakes), has a long plate brake fitted on each wing. These provide a high rate of descent with the maximum forward speed.

ONE OF THE TWO FOUR-WHEEL BOGIE UNDERCARRIAGES OF THE COMET : This drawing was made by Laurence Dunn from a position looking forward under the port-side wing. The wheel brakes are twin-disc and are hydraulically operated. The four-wheel bogies retract outwards into the wings. The twin-wheel nose unit is steerable and retracts backwards into the fuselage.

SPECIAL "SPHERE" DRAWINGS by LAURENCE DUNN

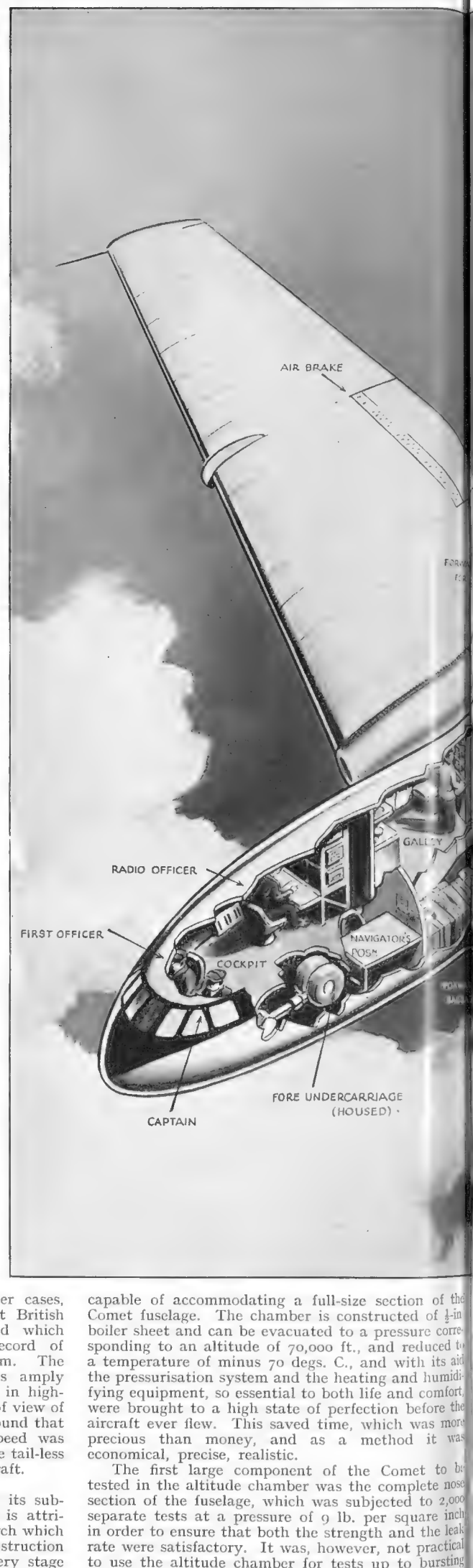
On the other hand, the design team of the de Havilland companies, who had been responsible for a long line of both civil and military aircraft and engines and who had designed and built the Goblin, the first jet engine to go into production in either England or America, believed that the gas turbine held out an immediate promise of commercial success. They therefore embarked on a study of the many problems involved, both practical and economic, from which they concluded not only that the engineering difficulties were surmountable, but that a jet airliner could be built which would prove economically highly competitive with the best of the piston-engined liners. The study showed further that operating economy would be augmented by an increased work capacity due to the ability of the jet airliners to fly more miles in the hour and in the year, which would in turn mean greater return on investment. Furthermore, the first cost need not be more, and the mechanical complexity must be radically less, than for current airliners, thus opening up a vista of simplified maintenance and operational regularity which would be very attractive to harassed airline maintenance staffs and traffic managers. It was at this juncture—and this was in 1946—that the boldness and foresight of the British Overseas Airways Corporation rallied to the unique opportunity. At a fixed price, and with the manufacturers' guarantee, under penalty, of performance and delivery date, the Corporation placed an order for fourteen of the jet airliners—then known as the D.H. 106—straight off the drawing-board. The British Government ordered, also at a fixed price, two further aircraft, the first to be delivered, for development work for the national benefit as a whole.

It was these orders which turned the Comet into a reality. Without them the financial risk would have been unjustified, but with Comets operating on B.O.A.C. routes, the chance of obtaining orders from other airlines would become a firm one and the prospects of being able to break even on capital investment would be good.

Once the orders were obtained, work was started in earnest. It was obvious from the first that the usual procedure of building one or more experimental prototypes before starting production could not be contemplated. It may here be said that the prototype system is a bad one in principle. In this particularly testing instance such a process, involving a long delay, might well have defeated our efforts to regain the lead. It was therefore essential that the Comet should go into production straight off the drawing-board. This decision—a courageous one by any standards—had a considerable influence on the basic design which in its final form represented a logical step forward rather than a daring stride into the unknown.

In the early stages of the design study several alternative configurations were investigated, including a twin-boom layout as used in the Vampire, a tail-less version and even a tail-first design. At one stage serious thought was given to the swept-wing tail-less design, which promised a high degree of aerodynamic efficiency. This formula was tried out experimentally, for its fighter possibilities and for the airliner and bomber cases, with the D.H. 108, which was the first British aircraft to exceed the speed of sound and which until recently held the world's speed record of 605 m.p.h. for the closed-circuit of 100 km. The aerodynamic efficiency of this layout was amply demonstrated and it played a notable part in high-speed fighter development. From the point of view of economical airliner design, however, it was found that the landing weight for a given landing speed was reduced, and it was therefore decided that the tail-less formula was not suitable for a passenger aircraft.

Much of the Comet's initial success and its subsequent freedom from design modifications is attributable to the extensive programme of research which went hand-in-hand with the design and construction phase before the first aircraft flew. At every stage practical tests and experiments were conducted to ensure beyond all doubt that the main and subsidiary components were beyond reproach. For instance, the Comet, in order to obtain maximum efficiency, has to cruise at heights ranging from 35,000 to 42,000 ft. This calls for a much higher cabin pressurisation than had ever been necessary for conventional airliners designed to cruise at about half this height. In order to reproduce a "cabin altitude" of 8,000 ft. while flying at 40,000 ft., a differential pressure of over 8 lb. per square inch between the outside and the inside of the cabin must be maintained. At 40,000 ft., too, the air is dry and cold—the temperature is often as low as minus 60 degs. C.—and this imposes unusual problems in connection with air-conditioning. In order that these problems could be thoroughly investigated, a special high-altitude chamber was built at Hatfield,

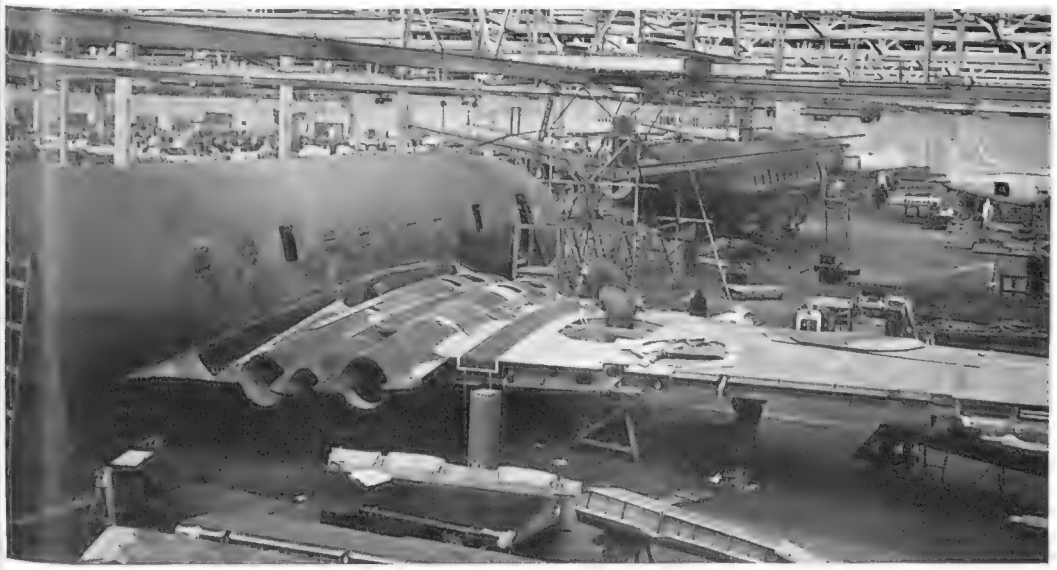


capable of accommodating a full-size section of the Comet fuselage. The chamber is constructed of ½-in boiler sheet and can be evacuated to a pressure corresponding to an altitude of 70,000 ft., and reduced to a temperature of minus 70 degs. C., and with its aid the pressurisation system and the heating and humidifying equipment, so essential to both life and comfort, were brought to a high state of perfection before the aircraft ever flew. This saved time, which was more precious than money, and as a method it was economical, precise, realistic.

The first large component of the Comet to be tested in the altitude chamber was the complete nose section of the fuselage, which was subjected to 2,000 separate tests at a pressure of 9 lb. per square inch in order to ensure that both the strength and the leak rate were satisfactory. It was, however, not practical to use the altitude chamber for tests up to bursting loads, because the disruptive force of compressed air would so damage the specimen under test that all evidence of the original point of failure would be destroyed. For this reason the system of water-pressure testing was adopted. The pressurised sections to be tested were submerged in a tank and themselves filled with water, the internal water pressure being increased as required. Because water is virtually uncompressible there is no pressure energy to be dispelled, and if a rupture takes place the damage remains local and the point of weakness becomes at once apparent.

The windows and window mountings form perhaps the most critical feature of a pressurised cabin, and this is particularly true of the Comet, which operates in the rarefied atmosphere of the sub-stratosphere. This point was appreciated from the start and it has

THE LAY-OUT OF THE COMET—A SECTIONAL DRAWING OF THE WORLD'S FIRST SUCCESSFUL JET TRANSPORT PLANE SPECIALLY DRAWN FOR "THE SPHERE" BY LAURENCE DUNN: The Comet provides pressurised comfort for between thirty-six and forty-eight passengers, and it will operate at 40,000 ft., cruising at about 500 m.p.h. The Comet's fuel, paraffin, provides much greater safety than petrol, and it is carried in wing compartments which are themselves oil-tight, so there is no necessity for inner tanks. Part of the floor of the main cabin is shown torn away to expose the lower hold. There are, of course, twin rows of seats with a central gangway. The stewardess has her position at the aft part of the main cabin. Air from each of the four jets is bled off to provide heating for the de-icing system and also for the cabins.



COMETS IN PRODUCTION AT THE DE HAVILLAND WORKS AT HATFIELD: Two nearly-completed fuselages and wing assemblies in the great hangar. This picture was taken about a year ago when the Comet programme was beginning to make real strides and the prototype was being got ready for flight tests.

been axiomatic, from the early design stage, that in the Comet the windows are as important as the wings, and that neither must ever fail. Here again the altitude chamber proved invaluable, and innumerable tests were conducted to determine the most suitable material and the method of mounting. The final window design was subjected to a very practical test at Hatfield. Mounted in a test rig on the roof of the factory, a number of specimen windows have been pumped up each morning to their working pressure of 8¼ lb. per square inch and the pressure maintained throughout every working day for over four years, during which they have been cleaned regularly twice a week with the standard scratch-remover polish used by the airlines. The test is still continuing, and the windows as yet show no sign of deterioration. As a further test, one of the windows of the Comet was removed after the first year's flying and was pressurised up to no less than 100 lb. per square inch without any signs of failure. It is a good operating pressure for a steam engine.

One of the most important aspects of pre-flight testing has been concerned with structural strength tests. These have ranged from routine destruction tests on small components and forgings to proof-load tests and ultimate strength tests on actual Comet wings and fuselages. The first production wing was set aside for structural tests and was attached to a section of the Comet fuselage in the elaborate test bay at Hatfield. With loads applied by hydraulic rams mounted on a superstructure of steel girders, the tests called firstly for many thousands of reversals involving a deflection of over 3 ft. at the wing-tip and finally for a test to destruction of the complete wing.

(Continued on following page)

WINGING ITS WAY ACROSS THE WORLD AT A HEIGHT OF 40,000 FT. : This dramatic cloudscape was taken from a de Havilland Comet during one of its spectacular overseas tours which were carried out in 1951. For the passenger, flying securely above the weather, Comet travel will be an unfailing delight and almost entirely free of vibration.

THE COMET BESTRIDES THE WORLD

(*Continued from previous page*)

Both the single-wheel undercarriage of the first two aircraft and the unusual four-wheel-bogie type, which is now standard on the production aircraft, have been subjected to an intensive series of static load tests, including drop tests on a special rig designed to simulate heavy landings. In addition to the strength tests, prolonged trials lasting many months were undertaken to seek out possible weaknesses in the mechanism for folding the undercarriage. During these trials the undercarriage was retracted and lowered over 16,000 times with all the bearings packed with a mixture of sand and grease.

One other important test warrants special mention. Because of its speed, the Comet's flying controls are power-operated, and to ensure trouble-free operation of this all-important component, a complete rig of the hydraulic power system, together with all the linkages, was operated continuously day in and day out for over two years in the experimental department at Hatfield.

Concurrent with the development and pre-flight testing of the Comet airframe, progress with the Ghost engine proceeded step by step through a long series of experimental tests.

The Ghost engine first ran on the test bed on September 2, 1945, and on July 24, 1947 (two years almost to the day before the Comet first flew), two Ghost engines took the air for the first time in a Lancastrian bomber. In this way the Ghost engines did over 1,700 engine hours of test flying and provided much valuable operating experience, but the scope of this form of testing was limited because the Lancastrian could climb only to about 25,000 ft., which fell far short of the Comet's normal operating height. In order to overcome this handicap, a Vampire fighter was modified to take the Ghost engine which enabled the tests to be continued at heights ranging from 40,000 to 50,000 ft. It was during the tests with the Ghost Vampire that John Cunningham succeeded in breaking the world's altitude record for aeroplanes when he reached the officially recorded height of 59,446 ft.

The thorough investigations which took place to make sure that the Comet would be an airliner second to none were not confined to the airframe and engines. In order to make sure that the Comet would in every way meet airline requirements, John Cunningham, de Havilland chief test-pilot, on whom rested the main responsibility for the Comet development flying, made five return flights across the Atlantic and two return trips to Australia as a crew member of B.O.A.C. aircraft. This was a typical example of the close co-operation which has existed between B.O.A.C. and de Havilland since the very earliest days of the Comet project.

Space permits only the highlights of the many thousands of tests which went to make the Comet a sound and practical aircraft from the day it first flew, but perhaps enough has been said to explain in some measure the exceptional freedom from trouble or modification which the Comet has enjoyed during the period of the flight and development trials.

As supplied to B.O.A.C., the Comet will provide seating for thirty-six passengers in two cabins. The main cabin provides seating for twenty-eight passengers in fully-adjustable chairs, while forward of this is an eight-seater compartment with facing pairs of chairs with movable tables. Between the passenger compartment and the crew quarters is a fully-equipped galley with an electric stove and a refrigerator. Aft of the cabin is the entrance vestibule with hanging wardrobes and a light-luggage compartment, whilst leading from the vestibule are the ladies' and gentlemen's toilets. Fully-loaded, the aircraft weighs nearly 50 tons and its wing-span is 115 ft. With full tanks the Comet carries over 20 tons of fuel divided into four wing tanks and one centre-section tank. The fuel used is paraffin, which, besides being cheaper than petrol, materially reduces the fire hazard.

Technically, the Comet represents a determined effort to reduce mechanical complication, a factor which has become a major problem with the modern main-line aircraft. The jet engine at one stroke eliminates cylinders, crankshaft, pistons, connecting-rods, carburettors, valves, tappets, magnetos, sparking-plugs, reduction gears and propellers—all are replaced by a single main rotating component consisting of a vane compressor and a turbine wheel mounted on a single shaft, with a few simple ancillaries. The absence of reciprocating parts means that vibration is entirely eliminated : on the test bed it is impossible to tell, from a sense of touch alone, whether or not an engine is running.

Since the Comet first flew in the summer of 1949, test and development flying has proceeded apace. The second aircraft of the type flew exactly one year to the day after the first, and since that time three others have been air-tested. Up to December 1951 the total flying time exceeds 1,500 hours. In the spring of 1951 one of the first two Comets was loaned to B.O.A.C. for route development flying in the hands of the Comet Unit, formed some months earlier to study all the problems involved in placing the aircraft in service. During the six months which these preliminary trials lasted the Comet covered over 92,000 miles along the Empire air routes to South Africa and the Far East, in the course of which some remarkable times were established. In July, for instance, the Comet flew from London to Johannesburg, with halts at Cairo and Entebbe, in an overall time of 17½ hours, whilst in October it covered the route to Karachi, with a stop at Cairo, in a total time of 10½ hours. On the final tour of the series the Comet reached Singapore, with stops at Cairo, Karachi and Bangkok, in 24 hours 35 mins., just missing the twenty-four hours overall time because of an unexpected delay of 1½ hours on the ground at Bangkok due to non-standard refuelling arrangements. In addition to the flights along the B.O.A.C. routes the Comet spent many hours flying in the vicinity of London Airport studying the traffic control problems in co-operation with the officials of the Ministry of Civil Aviation. Practical experience of this nature has shown that the Comet fits well into the existing traffic pattern of our busiest airport and that many of the expected difficulties of handling jet aircraft in the congested air of the Metropolitan Control Zone are not so serious as was at first thought. Perhaps the outstanding lesson which has been learned by the route trials conducted by B.O.A.C. is that the speed of the Comet has thrown into sharp relief the deficiencies of the ground services, such as communications, Customs formalities, and passenger handling facilities, all of which need streamlining to fit the new pattern of jet travel.

All the indications are that the Comet, when it goes into service on the B.O.A.C. routes in 1952, will represent a revolution in air travel. Apart from the obvious advantage of speed—time-tables will be cut by something like 50 per cent.—the comfort of jet travel will surpass anything yet experienced on land, sea, or in the air. At 40,000 ft., high above the weather, the air is rock-steady, and this, coupled with the total absence of vibration in the cabin, banishes all sensation of movement.

In the Comet Britain has a potential world-beater. No other country has yet embarked on the quantity production of jet airliners, and the aircraft industry in the United States still awaits orders before starting to build even a prototype. Given encouragement, our technicians can maintain the lead, and in the right conditions our industry can produce the aircraft for which the world is waiting. There is to-day a shortage of civil aircraft, and a worthwhile export market is within our grasp ; there never was such an opportunity for the British aircraft industry.

But for rearmament it would be easy. No one will contradict that to-day military aircraft must have the highest priority, but it must never be forgotten that air power, the prime element of rearmament, is indivisible : it consists not of fighting strength alone but also of national air transport, and the aircraft industry which generates both. Just as the Navy must be backed by a strong mercantile marine, so must an air force have behind it a vigorous merchant air-service. To foster the strength of our aircraft industry by establishing a thriving export business will help our economic stability—which our enemies seek to destroy—and will encourage our allies as well as ourselves.

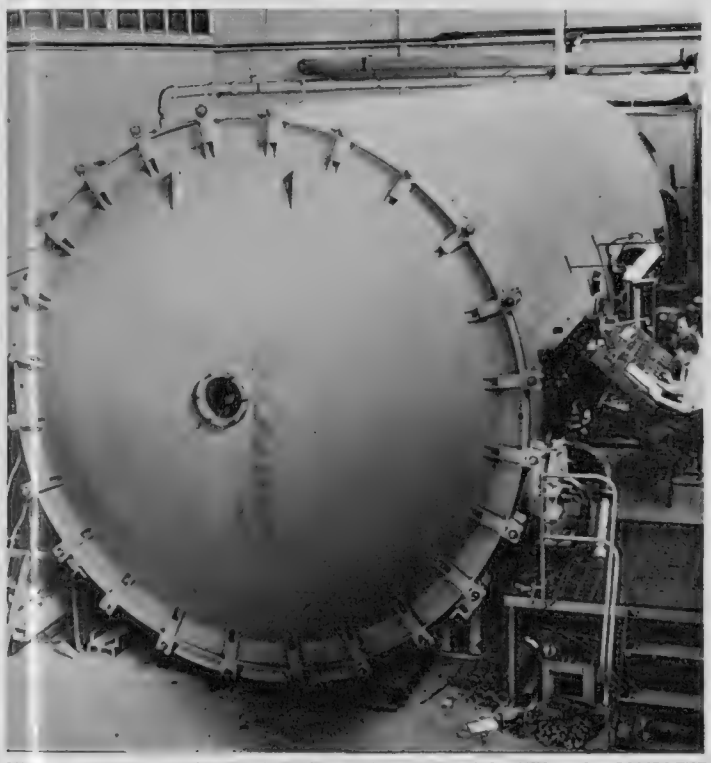
Thanks to our present lead, the opportunity is within our grasp. If we let it slip we may never have another chance, but, exploited to the full, we may yet see Britain, so long master of the seas, take its place unchallenged in the air. We are entering perhaps upon the Elizabethan age of flying.

TESTING THE STRESSES AND STRAINS IN A DE HAVILLAND COMET AIRLINER

The Initial Stages of Experimentation with Vital Components Preceding the Production of the Famous Jet Plane which is Revolutionising Commercial Flying

HOW THE CHASSIS OF A THREE-TON LORRY WAS USED IN AN UNORTHODOX BUT PRACTICAL TEST FOR A COMET NOSE WHEEL AND STEERING APPARATUS: Sir Geoffrey de Havilland is seen at the steering wheel of this unusual vehicle which covered over 120 miles up and down the runway at Hatfield before technicians were satisfied that the nose wheel was ideally suited for the purpose. Two Mosquito undercarriage wheels were provided in order to prevent the apparatus being overturned.

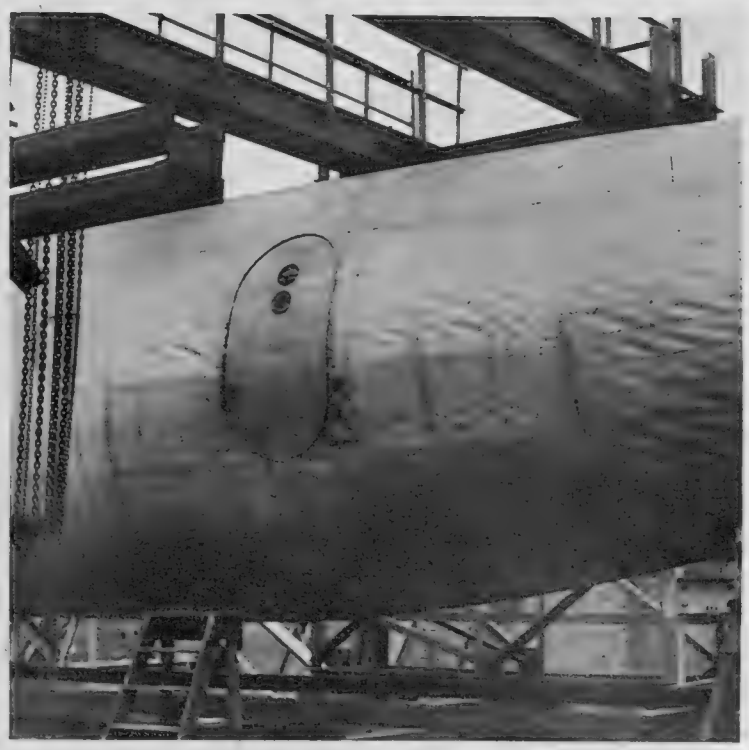
"GHOSTING" ABOVE THE CLOUDS: During its early trials the Ghost jet engine, the Comet's means of propulsion, was tried out in the outboard engine positions of an Avro Lancastrian bomber. As will be seen from this picture, the tests were conducted with the inboard Merlin piston engines stopped, although all four engines were used for take-off. The de Havilland Ghost develops 5,000 lb. of static thrust and is fitted with a centrifugal-type compressor.



THE ALTITUDE CHAMBER WHICH WAS USED TO TEST A COMPLETE SECTION OF THE COMET FUSELAGE WITH ALL THE PRESSURISATION AND AIR-CONDITIONING EQUIPMENT: The chamber is capable of producing conditions of pressure equivalent to 70,000 ft. of altitude, and covers a temperature range from + 40 to — 70 deg. C.

On right—

THE FIRST COMET FUSELAGE BEING SUBJECTED TO A SERIES OF STRUCTURAL TESTS AT HATFIELD: This picture shows the fuselage under a torsional load many times more severe than would ever occur in flight. The Comet's freedom from design modification is attributable to the programme of research which went hand in hand with the design and construction phase before the aircraft flew.



THE COMET PRODUCTION LINE IN THE DE HAVILLAND FACTORY AT HATFIELD: In addition to the fourteen Comets on order for the British Overseas Airways Corporation and a further six for which they are negotiating, other Comets are being built for Canadian Pacific Air Lines and for Air France. Orders have also been placed by the French airline company Union Aeromaritime de Transport. Union Aeromaritime connects Paris with French Equatorial Africa and Indo-China. Union Aeromaritime's terminal points are Abidgon, Brazzaville and Saigon. Government orders so far received are two for the Ministry of Supply and two for the Canadian Ministry of Defence.

WHERE WHITE "KING" BULL STILL REIGNS SUPREME—A UNIQUE HERD TAKING SHELTER IN BRACKEN HIGH ON A HILL NEAR CHILLINGHAM, NORTHUMBERLAND: White "King" Bull (fifth beast from left), a proud animal, his strength proved in battle, reigns supreme over a really unique herd. They are the wild white cattle of Chillingham, probably the only true descendants of the oxen which roamed Britain before the yoke of man was felt by wild beasts. Never yet, in the 700 years since they were first corralled in the land around Chillingham Castle, have they submitted to the yoke. The beasts become restless at any sign of the approach of human beings, and to attempt the rounding-up of a member of the herd would mean almost certain death from the horns of the other beasts. They are in consequence left strictly to their wild contented solitude.

HOME NEWS IN THE LAST DAYS OF 1951

The First Snows of Winter; Mr. Attlee Receives the Freedom of Leeds; A British Yacht is Shipped to America; and Other Home Events in Pictures

HUNGRY SHEEP ON AN ENGLISH SNOW-BOUND FARM ARE FED WITH HAY: Once the snow has hardened over the grazing lands there is but a meagre supply of grass for the sheep and their diet must be supplemented by hay. In this picture a small flock of sheep, with lumps of snow from a recent heavy fall on their backs, are waiting patiently while the farmer, Mr. Mitchell Duncan, of West Mains Farm, near New Deer, places the hay above the snow but well within their reach.

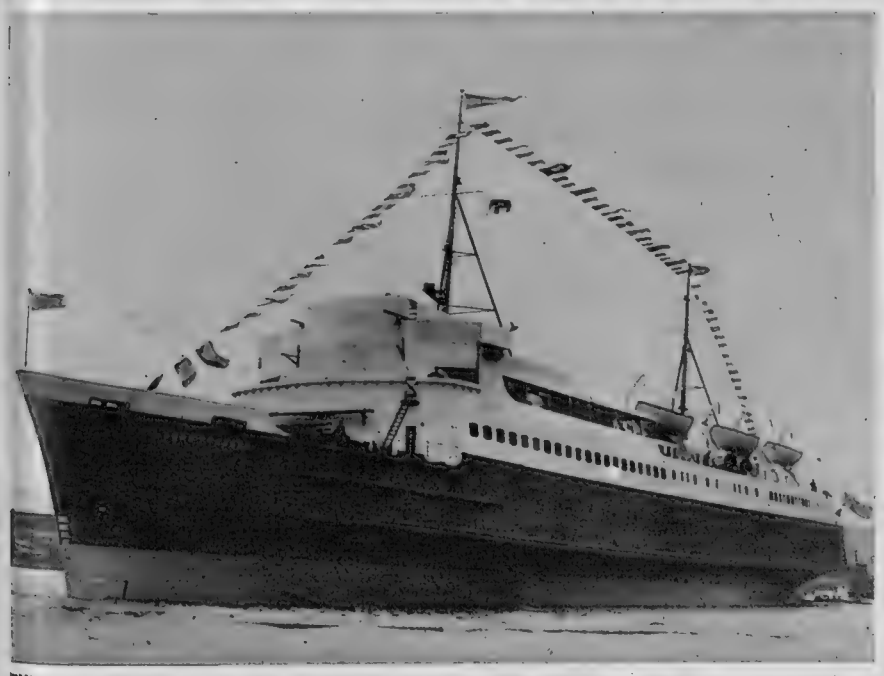
THE GRADUATION OF THE 61ST ENTRY OF AIRCRAFT APPRENTICES AT THE HALTON NO. 1 TECHNICAL TRAINING SCHOOL: Marshal of the Royal Air Force Sir John C. Slessor shakes hands with Flight-Sergeant G. F. Poyser, of Hanworth, the best all-round apprentice, as he awards him one of the prizes. Sir John reviewed the graduation parade.

MR. ATTLEE RECEIVES THE FREEDOM OF THE CITY OF LEEDS: The Lord Mayor of Leeds, Lieut.-Colonel F. E. Tetley, presents Mr. Attlee with a silver rose-bowl to mark the occasion. Mrs. Attlee stands on the left. The ceremony of conferring the Freedom of the City upon Mr. Attlee was conducted with traditional ceremony. Among those taking part in the procession were the Lord Lieutenant of the West Riding, Lord Scarbrough, and three of the six surviving Freemen of the city—Lord Halifax, Mr. Arthur Greenwood, M.P., and Mr. Thomas Thornton, a former town clerk. Mr. Attlee was loudly cheered by the crowd.

HER MAJESTY THE QUEEN PAYS A VISIT TO THE ROYAL SCHOOL OF NEEDLEWORK IN WEST LONDON: Her Majesty admiring the work of Hazell Senitt (right), to whom she had presented a diploma during her visit to the school shortly before Christmas. At the end of her visit the Queen took tea with Princess Alice, Countess of Athlone, and officials of the school.

THE CONTROVERSY OF THE CHICHESTER CATHEDRAL TREES: *Left*—Felling some of the trees in West Street which the Chichester City Council decided to remove in order to improve the street. *Right*—The trees as they were when in full leaf last year. It was at first suggested that all the trees in the street near the Cathedral should be removed, but many residents objected strongly and 6,000 signed a petition against the project. The City Council then approved an amended scheme to cut down only seven of the sixteen trees, but this, too, has met with opposition. The 6,000 who signed the petition were mostly residents of Chichester and its neighbourhood, but many names from all over the country and from overseas reinforced them.

On *right*—DOLLARS FOR YACHTS: The 8½-ton auxiliary racing-cruising yacht *Zaida* is lifted by floating crane on to the S.S. *American Reporter* at Victoria Docks for shipment to New York. She is to sail in the biennial Ocean Race to Bermuda next June. The *Zaida* is the first of three yachts built to the design of Mr. Arthur C. Robb which have been sold to Americans for a total of some 40,000 dollars, and is believed to be the first yacht of its size and type to be built in Britain for the United States since the war. She is of the celebrated Lion class design and is No. 12 of the class, which now numbers sixteen. The *Zaida* was built by Messrs. A. H. Moody and Sons, Ltd., of Swanwick Shore, near Southampton, the builders of *Cohoe*, which has won the Transatlantic Race. She has been bought by Mr. Colin Ratsey, well known for his successes in International dinghy racing. Mr. Ratsey is a director of Ratsey and Lapthorn, the famous New York firm of sailmakers, who have made the sails of the America's Cup defenders.



THE LAUNCHING OF A NEW CROSS-CHANNEL PASSENGER CAR FERRY AT DUMBARTON: The *Lord Warden* was launched at the Leven Shipyard. She is a twin-screw vessel intended for the service between Dover and the French Channel ports. The ceremony was performed by Mrs. Elliot, wife of Mr. John Elliot, Chairman of the Railway Executive. The *Lord Warden* is 361 ft. long and has been specially designed for the transport of motor coaches, cars and passengers. Her stern is made to suit the special ramps by means of which cars are able to run direct on to the motor-car deck. A turntable has been fitted on the main deck of the ship to facilitate manœuvring of the cars.

READY FOR HER MAIDEN VOYAGE: Tugs nurse the S.S. *Pacific Reliance* into a lock on the Manchester Ship Canal on her way to the docks, where she was loaded before sailing on her maiden voyage to the West Indies. In some of the locks there was only 6 ins. to spare on either side as the vessel went through them.

TWO NEW PROPERTIES for the NATIONAL TRUST

And a Crofter's Cottage in the Outer Hebrides Becomes the Home of a Family from California

ONE OF THE FINEST TITHE BARNS IN THE COUNTRY BECOMES THE PROPERTY OF THE NATION: Bredon Tithe Barn, Worcestershire, which has been presented to the National Trust by Mr. G. S. Cottrell, with help from the Pilgrim Trust. Built in the fourteenth century of stone and heavy timber, it is 132 ft. long. The tithe barn is one of the attractions of the village, which stands close to the River Avon and the Gloucestershire border. Nearby is the Bredon Hill which rises to a height of 961 ft.

TWO OF THE PORCHES OF THE BREDON TITHE BARN WHICH HAS JUST BEEN HANDED OVER TO THE NATION: One of the barn's side porches is renowned for its unusual stone cowling. The small village of Bredon is situated 10 miles north of Cheltenham.

A HOME OF ANTIQUES ALSO PASSES INTO THE HANDS OF THE NATION—SNOWSHILL MANOR HOUSE, GLOUCESTERSHIRE, TOGETHER WITH ITS COLLECTIONS OF TREASURES, WHICH MR. CHARLES WADE HAS PRESENTED TO THE NATIONAL TRUST: *Left*—A view of the Tudor kitchen showing the fireplace and some of the armorial bearings which form part of the collections of treasures. *Right*—The front of the house, built in the early part of the eighteenth century, seen from the garden. The treasures associated with Mr. Wade's gift include collections of early clothes, musical instruments, clocks, toys and armour. The Cotswold village of Snowshill is situated just close to the Worcestershire border, a few miles from Broadway and Chipping Campden.

THE SCOTTISH HOMESTEAD OF AN AMERICAN COUPLE—MR. AND MRS. COLIN GLASGOW'S CROFTER'S COTTAGE AT MACHAIR, SOLLAS, NORTH UIST: The Glasgows, who formerly lived in California, moved into the cottage in the Outer Hebrides nearly two years ago. They came to Scotland in January 1949 in order to study Gaelic and to visit the homes of their ancestors. Mr. Glasgow met his wife at a Gaelic class at San Francisco University six years ago. He was serving with the United States Navy at the time. Both found they had common interests in the language and decided to visit Scotland after the war. They were married in 1946 and their daughter, Eilidh Bhan ("Fair Ellen") was born in Scotland seventeen months ago. She is now learning to talk in Gaelic. At the moment Mr. Glasgow is taking an Arts course at Glasgow University.

AN "EMIGRANT" FROM CALIFORNIA: Mrs. Audrey Glasgow fills her bucket with spring water from the well near her cottage home at Machair, Sollas, North Uist, in the Outer Hebrides.

MOUNTAINEERING IN BRITAIN

The Lure of the High Places, Where Britain's Youth Seek the Paths of Maximum Difficulty

By ELIZABETH COXHEAD

(*Author of "One Green Bottle," and "A Wind in the West"*)

Adventuring in the high places has a deep fascination for the youth of Britain, whether it be for those who snatch an afternoon to climb the gritstone outcrops of the Pennine Moors or those who save their energies for a fortnight's holiday amid the remoter hills of Skye or of North Wales. On this and the following pages three well-known writers on mountaineering subjects describe this most popular of pastimes. Elizabeth Coxhead, whose novel "One Green Bottle" dealt with mountaineering in North Wales, and whose earlier work, "A Wind in the West," touched upon climbing in the Hebrides, writes this introductory article, and on the following pages there are contributions from V. A. Firsoff, author of "The Cairngorms on Foot and Ski," and Seton Gordon, author of "Afoot in the Hebrides," and other volumes.

MOUNTAINEERING in Britain is mountaineering in comfort. Not for us the austerity of the Alpine hut, the nightmare of a 2 a.m. start on a breakfast of stale bread and milkless tea, the trudge up the moraine in the dark, the breathlessness of high altitude. No, the climber in Britain sets out round about ten o'clock, in a civilised manner, fortified by the bacon and eggs that most country districts can still supply; and he may positively, if he is quick on the descent and knows the country well, return in time for tea.

For our mountaineering is, in the main, rock-climbing. We have no hills that cannot be ascended in three hours, and outside the Coolin scarcely any summits that cannot be reached with hands in pockets. Climbers therefore draw a perhaps snobbish distinction between themselves and the mere mountain walker. They are not primarily interested in summits, and in fact may seldom deign to visit one. Their aim is to find the route of maximum difficulty; and a surprising number of our characteristically rounded, elephant's-back hills break off into sudden cliffs and precipices, which give them the terrain they need.

Sometimes the very existence of such a precipice is not known to the walker. The crowds who plod up Ben Nevis by the tourist path scarcely realise that a wall of cliff two miles long and 2,000 ft. high lurks just over the other side.

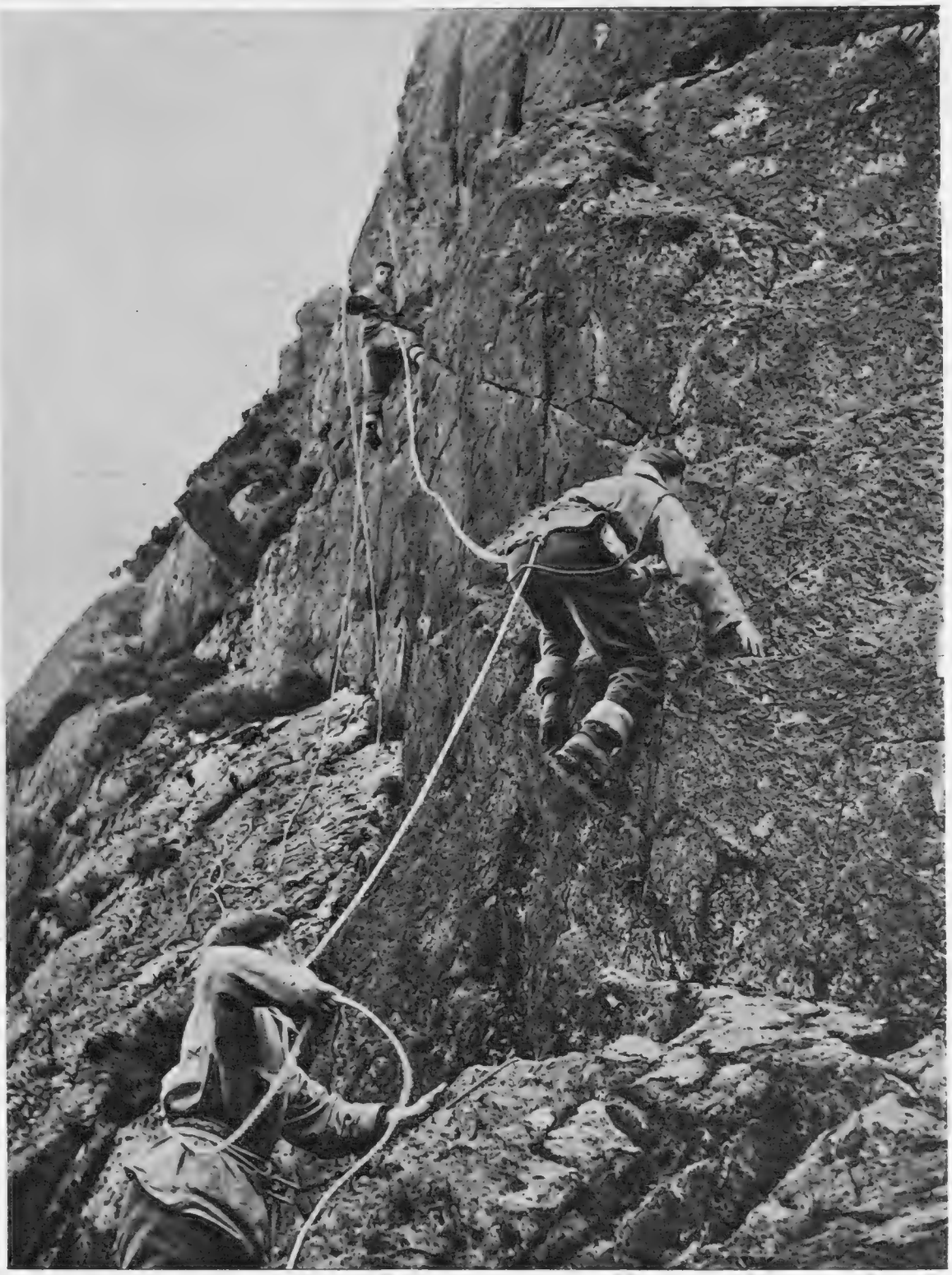
The pleasure of rock-climbing is hard to explain to those who have never tried it. "Why do you want to make things harder?" they will ask. But the answer is that to a person of normal health and agility, climbing is not harder than plodding uphill, but on the contrary, less of a physical strain, because arms help out legs, and every muscle in the body comes into play. It is an instinctive and natural form of exercise; a baby climbs before it can walk. And, of course, it is infinitely more interesting. No one move is just like another. Mind and body are continually on the stretch, and all one's personal worries fall away.

And by some alchemy, the beauty of the mountain scene is more acutely felt on a climb than on a walk. Perhaps it is because one only has leisure to notice it now and then, and thus keeps the sense of freshness; moreover, steep rocks, as every photographer knows, make by far the most dramatic foreground to a view.

Of course, it is not a good idea to start off—or be started off—on a hard climb. Novices' nerves have been broken that way, and for the average beginner, a route of "easy difficult" standard is quite enough. Most of the climbing clubs are conscientious about helping beginners, and the climbing sections of such bodies as the Youth Hostels Association, the Ramblers' Association, or the Holiday Fellowship arrange week-ends, or courses of a week or so, in which the rudiments of the sport can be learnt.

But to anyone not in their first youth, or to whom economy is not a first consideration, probably the best way to begin is under the tuition of a qualified mountain guide. About a dozen men now hold the certificate of the British Mountaineering Council, which has laid it down that their function is to instruct, and not, as sometimes happens with the less reputable type of Alpine guide, to haul the client about like a parcel. On the contrary, their aim is gradually to make him independent of their services. When professional guiding first started in Britain, some years ago, there was an outcry. But even the most conservative member of the Alpine Club would now admit that their influence has been an altogether healthy one.

The novice need not own a rope—the instructor will furnish that, and to-day it will most probably be of nylon—but he must equip himself with proper footgear. That means tricouni-nailed boots, which can be got in the utility range (nailing extra) from several well-known makers. The newest technique is to climb in rubber-soled boots, but it is advisable to learn in nails, particularly on British rocks, which are often mossy or greasy. The rest of the outfit does not matter much. It should be reasonably warm and waterproof, and had better be old, for rock-climbing is cruelly hard on one's clothes until one does it well. But if buying new, corduroy breeches loose to below the knee are the thing, with a windproof jacket and several layers of light jerseys.



AN R.A.F. MOUNTAIN RESCUE SQUAD IN TRAINING IN SNOWDONIA: Sergeant John Lees, having gained a foothold and secured the nylon rope round a rock point, signals Sergeant Anderson to follow, while Leading Aircraftman Christie gradually pays out the rope at the bottom. They belong to a party of twelve picked members of the R.A.F. Mountain Rescue Unit who have been undergoing a toughening practice course. These units came into being during the war, being made up entirely of volunteers, and to-day the R.A.F. maintains nine teams, each consisting of an officer and thirty-six men. The teams do not restrict their activities to rescuing occupants of crashed aircraft, and they have done some notable work in helping less experienced climbers to safety. Indeed, this latter aspect of their work has often been dominant.

The purpose of the rope should be obvious, yet astonishingly few people seem to realise that it is there to save everybody except the leader from risk. The leader climbs up till he reaches a ledge where the rest of the party will be able to stand, and where there is a spike or knob of rock, the "belay" round which he can pass the rope. Thus safeguarded himself, he hauls in the rope round his body as the rest ascend one by one. Should one of them slip, he will only go down an inch or so before the leader checks the slip. "Ropes make everything look so dangerous," nervous wives have been known to say. That may be so; but properly used, they make everything perfectly safe.

Coming down, of course, the order of the rope is reversed, and the leader goes last. For the beginner, climbing down is rather more of an ordeal than climbing up, because the holds are harder to see and the sense of the void below is more acute. But I should add that few of those who imagine they will feel giddy on a rock-climb do so when it comes to the point. It is not in the least like climbing down a ladder—and then, one has so much else on one's mind!

Where to begin? North Wales and the Lake District are our richest, most varied and most accessible climbing-grounds, and they have all the professional guides between them. I have a notion that the Welsh standard of difficulty is slightly lower than the Cumberland, but that may be prejudice.

Capel Curig makes the best Welsh centre, for it is equi-distant from the Snowdon and the Glyder-Carnedd massifs, but one needs some form of transport (a bicycle will serve). Otherwise one has the choice of staying at the Pen-y-Gwryd or Pen-y-Pass Hotels, under Snowdon, or at the Ogwen Cottage Guest House or the Idwal Youth Hostel, under the Glyders. Tryfan, with its Milestone Buttress coming almost to the

(*Concluded on page 546*)

Mountaineering in Britain

RIDGE-WALKING UPON ARRAN

Airy Walks With Varied Views of Mountain and Sea

By V. A. FIRSOFF

(Author of "Arran With Camera and Sketchbook," and "The Cairngorms on Foot and Ski")

ON a clear day Arran can be seen from the Glasgow heights. From the Ayrshire coast, across the Firth of Clyde, it is a haunting vision of cloud-capped mountains, pale and misty in fine summer weather, dark against the sunset sky of autumn, or deep slate-blue when a brisk nor'-wester sends white horses riding over the sparkling sea.

The mountains are concentrated in the northern part of the island, which geologically belongs to the Highlands, while the country south of the String Road, connecting Brodick with Machrie, corresponds in character and structure to the Southern Uplands of Scotland. The great bens have been carved out by erosion from a circular outcrop of granite, probably the stump of an ancient Tertiary volcano. Thus the horizontal scale of the system is small. Nor are the absolute heights at all impressive: Goatfell, the highest point, is barely 2,866 ft. above sea-level. The remaining granite peaks are spaced between this height and some 1,600 ft. Yet the sea almost washes their feet and the narrow glens are trenched deep, rising no higher than the 500-ft. contour in their central parts, so that the drops are fully as great as in many much higher mountains.

The gradients are steep and precipices abound, built up massively with huge granite slabs known in the climbing jargon as "boiler plates," or chunky crags whose rectangular rock-joints have earned them the name of "Cyclopean masonry." The northern precipice of Cir Mhór, if the lowest tier of slabs is drawn into the count, is nearly 1,500 ft. high. The slabby western face of A'Chir is not much short of 1,000 ft. The triangular scarp of Beinn Nuis stands 600 ft. above the scree, and there are other vertical features scarcely less imposing.

Yet perhaps more unusual for this type of topography are the narrow ridges, which afford fine airy walks with varied views of mountain, sea, bay, island and cloud changing with kaleidoscopic rapidity beneath the fleeting chessboard of sunshine and shadow. The ridges, narrow as they mostly are, rarely attain to the dignity of rock-climbs, and more often than not the difficult pitches can be by-passed without much loss in altitude. There are, however, places where at least scrambling experience is required, and, what with the uncertainties of weather, it is unwise to venture into these hills without some mountaineering training or guidance. With the single exception of The Saddle, the cols and passes are high and not much vertical climbing is involved in following any of the main ridges. The distances are never prohibitive, and numerous distinct landmarks facilitate orientation in low visibility.

The Arran Mountains are split into two groups by the Glens, Iorsa and Easain Biorach, meeting in the pass of Loch na Davie, a mean little sheet of water which yet feeds two copious streams. To the east lies the more interesting Goatfell group. Westwards a chain of rounded, undistinguished heights leads to the western ridge rising beyond the straggling streak of Loch Tanna, abruptly enough but without much show of rock.

Goatfell is conveniently situated between Brodick and Corrie, and can be gained from either place in a couple of hours without undue exertion. Towards the east the mountain sends a gradual ridge called Cnoc Breac, buttressed up with some rocks on the north side, but gentle and slabby in the south. This carries the main walking paths to the summit, which makes a fine viewpoint. Another bolder but equally easy ridge descends towards Glen Shant in the south and forms a good alternative approach from Brodick. There is also a short rocky arete or *fiacail* dropping sharply west to Glen Rosa. The *fiacail* may provide some scrambling practice.

Standing near the triangulation cairn of the latter we can admire the noble outline of Cir Mhór, followed by the circular sweep of the Hunter's Ridge and the tor-crowned top of Caisteal Abhail, the second highest of the Arran bens (2,817 ft.), then the western peaks, and, distantly, the Paps of Jura and other Hebridean isles beyond Kintyre.

North of Goatfell the castellated ridge of An Stacach offers some scrambling pitches, which can be avoided by a path threading its way at the foot of the crags on the west side. The ridge terminates in a prominent rock known "unofficially" as North Goatfell, on which two ridges are pivoted. One, narrow, gritty and partly rocky, plunges down to The Saddle, 1,200 ft. below; the other continues easily to the broad whaleback of Mullach Buidhe (2,687 ft.). Here the eastward sidings are fairly gentle; with a succession of high corries, Lan, nan Larach, and na Ciche, the latter also known as the Devil's Punchbowl, divided by subsidiary ridges. The first of these is dignified by the name of Am Binnein, throws up some rocks, and from Corrie appears as a fine triangular peak, often mistaken for Goatfell. To Glen Sannox in the west Mullach Buidhe presents a fiercer aspect, Cyclopean buttresses rising steeply between rapid scree-shoots, barred by stretches of smooth slab-work.

At Coire ne Ciche the Maiden's Breast, *recte* Cioch na h-Otghe, comes into view with a 600-ft. precipice of rotten rock traversed by a system of slanting ledges, which encloses the corrie in the north. A comparatively low peak of barely 2,168 ft., this is yet one of the most impressive sights in Arran. The ridge is narrow and very steep on both sides, though the near-vertical chasm on the east is treacherously disguised by a thick mantle of vegetation. If followed strictly, it involves a little climbing, but a cairned path, of no difficulty except when under snow, gives access to the summit knob. Hence the mountain falls away in a cone, which runs towards the north into an indistinct crest, followed down to the glen by a gritty and meandering track.

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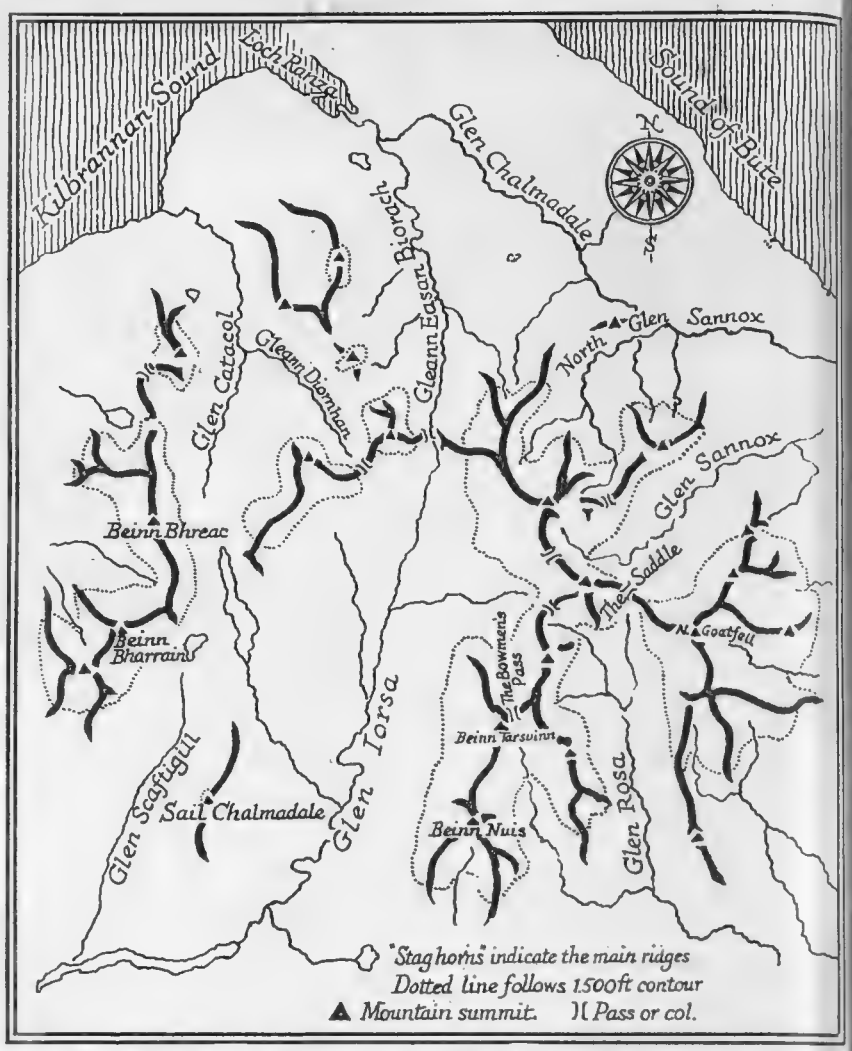


THE GRANITE MOUNTAINS OF ARRAN, A KEY MAP FOR THE RIDGE WALKER IN THIS WESTERN ISLE: This sketch-map, based upon a map in Mr. V. A. Firsoff's new book *Arran With Camera and Sketchbook* (Robert Hale. 18s.), shows how the ridge walker, travelling by narrow ways, may pass from summit to summit, gaining, as he goes, magnificent views of mountain, sea and sky. The map is drawn to a scale of half-an-inch to one mile.

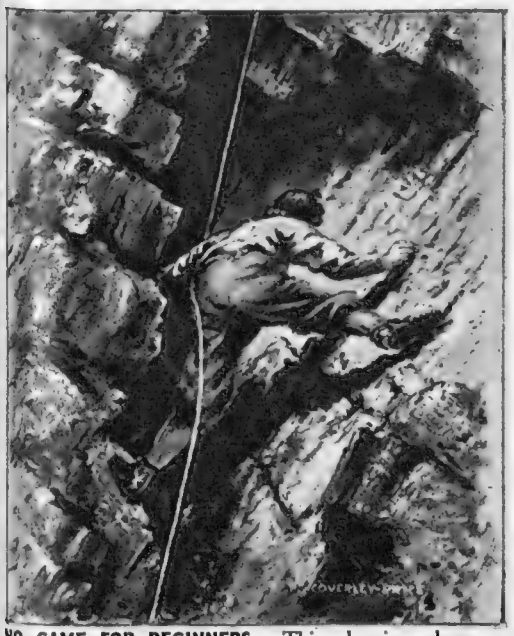
THE BEAUTIES OF ARRAN, A PARADISE ALIKE FOR THE WALKER AND CLIMBER: *Left*—Looking across to the Mull of Kintyre from among the heathery ridges of Arran. This is not on the climbing side of the island. *Right*—This is a typical piece of Arran ridge walking country. The V-shaped cleft on the skyline is the famous Witch's Stop, and the rounded summit is Caisteal Abhail. The mountains are concentrated in the northern part of the island, which geographically belongs to the Highlands.

MOUNTAINEERING TECHNIQUE

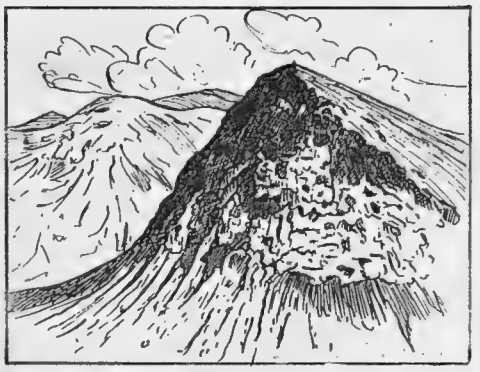
Shown in Special "Sphere" Drawings by Victor Coverley-Price

TRAVERSING A NARROW LEDGE: It is quite common for only two people to climb together on a rope, if they are good climbers. Three on a rope is considered safer. This picture shows two men on a rope traversing part of a rock face on a narrow ledge. The leader is working his way round a buttress (wondering what he will find beyond!), while the second man has ensconced himself firmly and is holding the rope belayed round a rock.

PRELUDE TO THE NEXT STEP: This drawing shows a climber leading up on slightly tilted rock strata—fairly sound and easy rock. He is trying to get his left foot firmly on to a small projection before taking the next step upwards. The rope should be knotted round his waist at his back, but it has slipped to his left side because the next man is lower down towards the left.



NO GAME FOR BEGINNERS: This drawing shows a woman climber ascending a "chimney"—in this case a crack in massive stratified rock. She is in the middle of the rope, the leader holding her from above and the third man from below and to one side. Some chimneys are easy, some are extremely difficult. Sometimes, in a narrow chimney with fairly smooth sides, it is necessary to hold one's self up and to work upwards largely by pressure of the hands, feet, knees and shoulders against the opposite walls of rock.



THE DEVIL'S POINT: One of the more dramatic peaks of the Cairngorms.

Mountaineering in Britain

ON CAIRNGORM HEIGHTS

Exploring the Tops in Succession

PART of the Grampians, the Cairngorms crowd in a thick mass round the meeting-point of the counties Inverness, Aberdeen and Banff. They are remnant hills *par excellence* of a structure graphically described by American geologists as "biscuit-board topography." A high table-land of coarse, red granite has been dismembered by erosion into portions and promontories, eaten into round the edges by the cauldrons of the corries which resemble the hollows left by the tumbler cutting biscuits from the rolled-out paste. Indeed, in the words of Sir Archibald Geikie, "there is more level ground on the tops of these mountains than in the valleys below."

The surrounding country averages between 500 and 1,000 ft. above sea-level, while the mean for the plateau of the Cairngorms will be rather more than 3,500 ft., and several points overshoot the 4,000-ft. mark: Ben Macdhui (4,296 ft.), the second highest mountain of Britain, Braeriach (4,248 ft.), Cairn Toul (4,241 ft.), and Cairn Gorm (4,084 ft.). These peaks together with Beinn a'Bhuird (3,924 ft.) and Ben Avon (3,843 ft.) make the "Six Cairngorms," which have all been climbed in one day, a feat of endurance, if nothing more, that I have no desire to emulate.

Part of the secret of this performance lies in the fact that the residual plateau-lands of the Cairngorms are linked up, so that, with a few exceptions, once the 3,500-ft. contour has been reached, little climbing is necessary to "do" the tops in succession. It is a matter of plain footslog over rough ground. Yet footslogging though this may be, it must not be despised, for the scale of the country is impressive. The Cairngorms cover no less than 150 sq. miles above 2,000 ft., and even above 4,000 ft. the area is to be measured in square miles. Thirty miles a day is routine for a Cairngorm expedition—one would hardly call it a walk—if one is to climb any of the main tops or cross over to anywhere.

The Cairngorms are walker's rather than climber's mountains. The rock is generally uninviting to a cragsman, holdless or rotten and treacherous. Still, the mural precipices of the corries afford many exciting routes, and in some of the north-eastern features the granite is sound enough. Foremost among these is Coire Bhrochain of Braeriach, whose central buttress with its prominent Black Pinnacle stands about 800 ft. above the scree. There is some good climbing to be had in the Rough Corrie of Beinn a'Bhuird, where the expert may be tempted by the steep Mitre Ridge. The rock spur separating Coire nan Clach from Coire an Dubh Lochain in the same massif makes an easier climb. This is one of the two genuine aretes the Cairngorms have to offer; the other is the Fiacail Ridge of Cairn Lochain, which is not particularly exacting. There are some ridge-like features also in the crags of the sgorans and Creag an Leth-choin (the Lurcher's Crag) in the Lairig Ghru, but the main climbs are definitely of the face type.

A good deal of rock climbing has been done in recent years in the north-western corries of Cairn Gorm, Cairn Lochain and Braeriach, which are within easy reach of the Glenmore mountaineering school, but the rock there is of a decidedly inferior quality. The Shelter Stone Crag of Loch Avon, on the other hand, is fairly sound, and those who fancy crawling up big slabs may try their luck on the 1,000-ft. face of the Devil's Point, conveniently above Corrour. On the whole, however, the Cairngorms are famed mainly for their snow climbs. Not only are the difficulties somewhat enhanced by the snow, with large cornices fringing the scarps, but they are also made safer than in summer, for all the loose debris is now bound.

THREE MEN ON A ROPE CLIMBING THE FIRST PITCH OF A ROCK CLIMB: A "pitch" is usually the distance that the climbers ascend in turn, one at a time: e.g., the leader may climb a short but difficult pitch and then ensconce himself safely so that he can hold the second man on the rope while he comes up to join the leader. Then the third man goes up. On an easy pitch they may all move together, with a suitable length of rope between each of them.

Being the highest compact mountain area in Britain and situated relatively far from the sea, the Cairngorms are best favoured by the snows of winter of all the British hills. The cover is seldom continuous below 2,000 ft., and even above the ridges are usually blown more or less clear by the fierce gales. But the gullies and other concavities form catchment areas for the drifting snow-dust, and soon become packed yards deep by the persistent blizzards of January and February, offering ski-ing prospects of varying excellence. At the beginning of winter the snow is often variable, crusted or icy, the hours of daylight are short and the winds can be most vicious on the High Tops. Yet with the approach of the spring this regime is relaxed, the snow-fields turn into *firn* or spring-snow, and in this form do not suffer so much from the ravages of weather.

V. A. Firsoff

A LEADER CLIMBING A STEEP AND EXPOSED ROCK PITCH: This kind of climb, if prolonged, requires nerve and a good head, and physical strength, but is not otherwise particularly difficult.

Mountaineering in Britain

ON THE ROAD TO THE COOLIN HILLS : This picture looks south-westwards to the climber's paradise, the sharp peaks of the island range which offer strenuous but, on the whole, trouble-free climbing. Mr. Seton Gordon describes some of his favourite climbs in the accompanying article on the Coolins.

The Coolins of Skye, Where the Walker Can Mountaineer

By SETON GORDON, C.B.E.

(Author of "The Charm of Skye," and "A Highland Year")

THE Coolins of Skye are celebrated throughout Britain as the rock-climber's paradise. It is not so widely realised that most of the sharp peaks of this island range can be climbed without a rope by any man or woman able to walk, let us say, ten miles without undue fatigue.

Sgùrr Alasdair (it is named after a great Skyeman, Alexander Nicolson), the highest, is a strenuous climb, but no rope is necessary here. Sgùrr na Banachdich, Garsven, Sgùrr nan Eag, all can be climbed by the ordinary walker. Sgùrr Dearg is harder, and its inaccessible pinnacle on the summit cannot be climbed without a rope. My own favourite, Bruach na Frithe, is the easiest of the range. This fine hill, in shape resembling a miniature Everest, gives as varied a view as any of the range, and is only 200 ft. lower than Sgùrr Alasdair. The walker starts from Sligachan and follows a track beside a burn of clearest water, where in early summer the blossom of rowan trees (this tree in old times was planted near houses in the Highlands to keep off bad fairies) is fragrant on the air above ice-cold waterfalls. At the top of the pass which leads to Glen Brittle he finds himself at the foot of a pleasant grassy corrie named Fionn Choire (the Fair Corrie), and this is his easiest way to the summit. If he makes the ascent in early June (as I did this year) he sees, on the banks of the stream which flows from the snow-fields at the head of the corrie, the delightful blossoms of that plant of the high hills, *Silene acaulis*, the moss campion. This plant is less than half an inch high. It covers itself with a close-packed cushion of red or pink flowers, heather-scented and very beautiful to see, especially when seen (as I saw them in June) at the close of a long day of sunshine. As I climbed the corrie I passed mountaineers with ice-axes, and I thought perhaps never before in the history of climbing had ice-axes been used in June on the Coolins, because the amount of snow last May and June was unprecedented.

When the climber has reached the head of the corrie and has refreshed himself at a well which is the highest in the Coolins, he leaves on his left a high, bold rock, known as Am Basadeir (the death-dealer), and, scrambling over loose stones, emerges on to a narrow ridge. Last June the snow lay 15 ft. deep on the north side of the ridge, yet a few feet beyond, on the south side, the roseroot and the northern rockcress were in full flower.

THE RED COOLINS OF SKYE : These hills are not the favoured haunt of climbers to the same degree as the Black Coolins. They are, however, extremely picturesque, particularly in mid-winter when snow lies on their graceful slopes.

To enjoy the sudden view which appears from the Coolin ridges the climber should make a mental resolution to keep looking down at his feet until the actual crest of the ridge is gained. He then looks up and sees what is a breath-taking view. One moment his view ahead has been restricted to a few yards, the next it extends over sea and land (if the day be clear) to a distance of fully 90 miles. From the ridge of Bruach na Frithe he sees, across Glen Sligachen, the mighty form of Blaven, with black rock walls and noble, rounded summit. Beneath Blaven is the lovely bay of Camusiunary, where the sea is light green below the sand. He sees, beyond Skye, the mainland of Ardnamurchan and, beyond Ardnamurchan, the hills of the Isle of Mull, chief among them Ben More, the Great Hill. He sees, beyond the lesser hills of the mainland of Scotland, the snowy dome of Ben Nevis where, in the deep corries, the secret places of the mountain, snow lies unmelted throughout the hottest summer.

He is now near the top of Bruach na Frithe, and by following the ridge reaches the small cairn on the summit without difficulty. He may have the good fortune to see, as I saw, a golden eagle glide past, strong, stately and large, only a few yards from him, following with effortless grace the contours of the hill and sailing across to the neighbouring peak of Sgùrr nan Gillean, a favourite perching-place of this great bird. He may have wondered, during the climb, that he had neither seen nor heard ptarmigan. It is said that fifty years ago this bird was comparatively numerous on the Coolins. Now it is rare, and although I have been often on the hills, I have never seen either a nest or a young brood. Indeed, I have never seen a pair of these birds, pure white in winter, white-winged even in summer, although I have several times put up a solitary ptarmigan.

The climber has now arrived at the top of Bruach na Frithe, rather more than 3,100 ft. above the level of the Atlantic Ocean, which lies beneath him. He now sees westward, and watches the sun and shade on the blue waters of the Minch and the Outer Hebrides that constantly change colour. If the day be very clear, he sees through his binoculars or telescope the lighthouse that crowns Barra Head 600 ft. above the sea. He watches wisps of ocean cloud wreath Hecla of South Uist, where Prince Charlie hid for three weeks in a cave in Corrodal. He sees the bold cone of the Clisham of Harris, highest hill in the Outer Hebrides and the last haunt of the ptarmigan in the Long Island. But his view extends beyond the Outer Hebrides. Beyond the island of North Uist he sees, on the far rim of ocean, two small islands just rising above the blue horizon. These are Hirta and Boreray of the St. Kilda group, 93 miles distant. On one memorable occasion the clearness of the air was such that I saw not only the peak of Boreray, but the stacks that rise beside it, and through the field of my telescope these stacks were snow-white from the great gannet colony which has its home here. It says much for the clearness of Atlantic air that gannets can be seen at a distance of 93 miles.

Once from St. Kilda I had the good fortune to see and identify all the members of the Coolin range rising blue and ethereal—mountains of dreams, intangible, far, far to the east. That was when men still lived on Hirta or St. Kilda : now they have gone and the island lives up to its ancient name, Hiort, Isle of Death.

CONTRASTING STYLES IN ACCOMMODATION FOR THE MOUNTAINEER—YOUTH HOSTELS IN LAKELAND AND SNOWDONIA : *Left*—Higham, the Bassenthwaite Lake Youth Hostel, which was opened in 1951. It has 100 beds and is ideally suited for those wishing to explore the north-western area of Lakeland. *Right*—The Snowdon Ranger Youth Hostel at Rhyd Ddu, Caernarvonshire, which can accommodate sixty climbers on a single night.

INTO BATTLE—A MARINE TRANSPORT HELICOPTER SQUADRON EN ROUTE TO KOREA'S BATTLE ZONE

A MARINE TRANSPORT HELICOPTER SQUADRON ON THE FLIGHT-DECK OF A UNITED STATES AIRCRAFT-CARRIER WHEN OUTWARD BOUND FOR KOREA: The Sikorskys have been used by the U.S. Air Force and Navy for miscellaneous general utility duties. Nowadays the helicopter is rapidly becoming a maid of all work in naval, military and civil life, its duties extending from crop spraying to air-sea rescue. In Korea it is likely to be used for inter-fleet communication, being particularly valuable in this respect during hours of radio silence. Earlier in the campaign helicopters were used for picking up the severely wounded from the front line.

HOME FROM WAR—A CRUISER RETURNS WITH A CREW FROM THE FAR EASTERN THEATRE OF OPERATIONS

H.M.S. "MAURITIUS" ON HER RETURN TO CHATHAM BEFORE CHRISTMAS, AT THE END OF HER COMMISSION: The cruiser returned to Chatham after service in the East Indies Station, but not with the company which served in her in the Persian Gulf (the cruiser was used for the withdrawal of British personnel from Abadan in October). She recently exchanged crews with H.M.S. *Kenya*, whose crew had completed their term of foreign service. Many of them served in the *Kenya* when she operated in Korean waters. *Mauritius* is one of the six ships of the Fiji class. She has a displacement of 8,000 tons and has a complement of 730. The ships of the Fiji class are a logical development from the Newcastle and Belfast designs and are said to have proved highly successful in service.

Behind the Scenes, and Before the Footlights

IN THE SCALA, MILAN

NEW PICTURES FROM ONE OF THE WORLD'S GREAT OPERA HOUSES

THE VAST AUDITORIUM PACKED FOR THE OPENING PERFORMANCE OF THE SEASON AT THE SCALA OPERA HOUSE, MILAN: Covent Garden, Manhattan's Diamond Horseshoe and the Paris Opera all enjoy an equal distinction, but Milan's Teatro alla Scala, built by Pietro Marino in 1778, enjoys a special fame. The auditorium, which holds 3,600, is not only spectacular in appearance, but the acoustics there are well-nigh perfect.

A LIVELY SCENE IN THE YELLOW REHEARSAL ROOM OF THE SCALA: Baritone Giuseppe Taddei has drawn his sword and attacked the tenor Mario del Monaco while the producer Mario Frigerio looks on and directs. The scene being rehearsed is from Act II of *Andrea Chénier*, written by Umberto Giordano. Del Monaco, who plays the title-role, wounds Taddei (playing Carlo Gerard), and leaves him half-dead, lying in a pool of blood.

A PART OF THE ENORMOUS WARDROBE OF THE SCALA, WHICH IS STORED IN A SUBURB OF MILAN: The old warehouses in La Bovisa suburb, where the settings and costumes were housed, were destroyed by bombs on the same night as the Scala itself. Now they have been restored and they house between 22,000 and 35,000 costumes for the many operas of the repertoire.

A PERFORMANCE AT THE SCALA OF "GISELLE," THE OLDEST BALLET IN THE MODERN REPERTOIRE: In this performance Yvette Chauvire, one of France's leading ballerinas, danced the title-role. Plans are well in hand at the Scala for the construction of a building to house ballet schools for men and women and for the finishing school for young singers which was founded in 1946.

FOR 173 years the Scala has been making music. It has also been making scenery, props, costumes, singers, dancers—and history. For most of that time it has been the recognised operatic centre of Europe.

Toward the end of the war, however, it looked as if the Scala might have to relinquish not only its supremacy but its very hold on existence. On the night of August 15, 1943, the theatre was hit by incendiary and high-explosive bombs that tore away the roof and most of the galleries and destroyed rehearsal rooms, dressing-rooms and costume rooms, leaving only the stage comparatively undamaged. The same night, other bombs destroyed the warehouses in the Milan suburb of La Bovisa where settings and costumes for over 100 operas had been stored.

It was over a year before the gutted auditorium could even be given a new roof. After the end of the war, however, reconstruction progressed rapidly; Milan authorities, the Milanese public, and Allied Military Government officials agreed that the project should be given high priority despite financial difficulties, material shortages, and other pressing reconstruction requirements.

On May 11, 1946, Arturo Toscanini raised his baton to conduct the opening concert at the new Scala, fulfilling a promise he had made at the end of the war. The acoustics, he said, were as good as they had been before the bombing. Except that paint and upholstery were new, the 3,600-seat auditorium looked much the same. But the rebuilders had taken advantage of their opportunity to modernise the theatre's technical equipment. They had installed a new heating system, air-conditioning, and electrical equipment involving 350 different lighting circuits for the stage alone.

Now in its fifth season, the revived Scala Opera has managed to turn many of its wartime misfortunes into assets. Costumes and scenery have almost all been replaced—at heavy expense but to artistic advantage, since many of the pre-war sets and costumes were out-dated. The same enthusiasm which led the Milanese to expend so much effort in putting their renowned theatre back on its feet has affected conductors, directors, singers, and all those connected with the complicated enterprise. The Scala's first post-war appearances abroad—a series of performances given at the Edinburgh Festival—have proved to the musical world that it still deserves its reputation of "nursery and testing-ground for all opera." Plans are already under way for a new building, next to the opera house, which will contain a small experimental theatre and rehearsal rooms for orchestra, chorus, and ballet, as well as classrooms for the men's and women's ballet schools and the finishing school for young singers which was founded in 1946.

Though the present theatre dates back over a century and a half, the Scala tradition is much older than that. "Lyrical theatres" of one sort or another have existed in Milan since the Renaissance. Records of liturgical singing in the cathedral (the remote origin of modern opera) date from 1119. But the immediate ancestor of the Scala was the Teatro Ducale, built in 1717 and destroyed by fire in 1776. Even before its

THE PARAPHERNALIA OF THE STAGE BEHIND SCENES AT THE SCALA : There is sufficient space here to store such large sets as are in current use or about to be used. The "flats" and "scrims" are either left hanging above the stage or rolled up like sausages and stored in a vertical panel. This panel runs from below the stage proper to about 35 ft. above it. Access to it is by means of a lift.

A REHEARSAL BEFORE THE MIRROR : Pirouetting before the great mirror in one of the Scala rehearsal rooms is Olga Amata in her costume as Pimpinella, from the ballet *Pulcinella*.

YVETTE CHAUVIRE IN THE TITLE-ROLE OF "GISELLE" : This is a scene from Act I of Adolphe Adam's famous ballet, in which Mlle Chauvire, one of Europe's finest ballerinas, recently performed.

LOOKING DOWN FROM THE FLIES ON A PERFORMANCE OF ROSSINI'S OPERA "OTELLO" : A scene from the fourth act, which includes the famous *Piangia Cantando*, the Willow song. This particular opera was first performed at the Scala on February 5, 1887. It is based on Shakespeare's tragedy of the same name.

VICTOR DE SABATA CONDUCTING A REHEARSAL AT THE SCALA OPERA HOUSE : At this stage the singers have only a piano for accompaniment. Later, as the opera shapes up, the orchestra will be included and the whole performance polished and integrated. Upon Sabata has now fallen the mantle of the great Toscanini.

destruction, however, the Milanese had felt the need of a larger and more elaborate setting for their favourite entertainment and had commissioned the architect Giuseppe Piermarini to draw up the plans.

The loss of the Teatro Ducale hastened preparations for its successor. Maria Teresa, then Empress of Austria and Duchess of Milan, gave permission for the new theatre to be built on the site of the demolished church of Santa Maria alla Scala. The church, a fourteenth-century edifice, had taken its name from its founder, Regina della Scala (a member of what was then the leading family of Verona), and the name was passed on to the theatre.

Despite its tremendous size (it is even now the second largest theatre in Europe), the Scala was completed in barely two years. From the outside, its neo-classical façade looked just as it does to-day except that it did not have the two small lateral wings, which were added in 1830. The stage has undergone considerable remodelling since Piermarini's time, and the fact that it has been successfully adapted to so many advances in operatic technique is considered a tribute to the foresight of the architect. But his greatest triumph was undoubtedly the acoustics of the hall. When they were first tested in the spring of 1778 a reporter from the *Gazzetta di Milano* called them "a miracle." If his language was exaggerated, his enthusiasm was shared by the audience on the theatre's opening night (August 3, 1778), and later generations have ratified his judgment.

In the early days at the Scala, civic pride and love of music did not prevent audiences from behaving in ways which, though common at the time, would seem unthinkable to-day. Boxholders—who owned their boxes and furnished them to their own taste—used them to receive their friends, eat or sleep, and talk out loud without regard to what was happening on the stage. Gambling went on day and night in the two foyers, where profits from the tables helped to fill the theatre's deficit during the first thirty years of its existence.

For part of this laxity contemporary critics blamed the theatres themselves—at least by implication. And it was logical that a poor performance should fail to hold the attention of its audience. The way in which the management of the Scala set out to combat the tendencies of the time was outlined by a friendly journalist who had attended a preview of its first production : "The system adopted in these performances," he wrote, "is of a hitherto unknown and totally unusual kind. It aims at reforming the enormous abuse that an uncontrolled execution has introduced into the Italian musical theatre. It hopes to attain its purpose by augmenting the motion and the action of the dramas, by fixing the actors' attention, and by putting more reality and therefore more interest into the performance."

A laudable programme, certainly, and one which the theatre is still doing its best to fulfil. To anybody who attends one of its glamorous opening nights, the Scala now presents a spectacle that dazzles the eye and music that is masterfully interpreted.

CAT'S EYES PROVIDE A MOTORING CONTROVERSY

Should They or Should They Not Flank the Highways of Britain?

By "THE SPHERE" MOTORING CORRESPONDENT

THE Duke of Edinburgh set the tongues of many motorists wagging the other day when he suggested that the familiar cat's-eye reflector studs should be placed on both sides of the road instead of down the middle. Speaking at the "coming of age" lunch of the Institution of Highway Engineers, he argued that when a motorist dips his headlight or switches on his fog lamp, the beam tends to light up the verge rather than the line of cat's eyes.

I have since sounded out a number of motoring and road organisations on this question, including the Automobile Association—of which the Duke is President—the R.A.C., the Road Research Laboratory and the British Road Federation. (The Duke made it clear, incidentally, that he was expressing his own personal opinion and that he had not consulted the A.A. officially.)

All the experts to whom I spoke made the same important point: that it would be difficult to keep the cat's eyes clean and bright if the studs were placed at the side of the road. These reflector studs are so made that they keep themselves clean. When the wheel of a car passes over them the glass prism is pushed down inside its seating in such a way that a rubber flange is drawn across the glass. This wipes off the mud or oil that might have accumulated on it and keeps it bright.

If the studs were fixed to the kerb or verge they would be drenched with liquid mud and would quickly lose their effectiveness. This has been shown by official experiments.

There is no doubt that cat's eyes are a most valuable feature of Britain's road safety measures, and in view of the interest aroused by the Duke of Edinburgh's remarks, I got in touch with Reflecting Road Studs Limited, the Halifax firm which claims to make 95 per cent. of all the cat's-eye road studs used in this country, in addition to doing a good export trade. I expect you have all heard, at one time or another, the story that cat's eyes were first invented by a Frenchman who sold the idea for a few shillings to someone who has since made a fortune.

Don't you believe a word of it! A director of Reflecting Road Studs assured me that cat's eyes were invented in 1934 by his own managing director, Mr. Percy Shaw, a Yorkshireman. "As far as we are concerned," they told me, "we have no objection at all to studs being used on both sides of the road instead of down the middle. We wouldn't mind a bit having to double our present output!"

It would certainly be an expensive business to have the studs on both verges, as they cost an average of 10s. 6d. each to make and fix. The normal distance between studs is 12 yards on the straight and 4 yards on bends. More than 20,000 miles of road in the United Kingdom are fitted with cat's eyes, and Reflecting Road Studs Limited are making studs at the rate of 600,000 a year for home use alone. These are mainly replacements, the average life of cat's eyes being about five years, though the traffic volume makes a big difference to the speed at which they wear out.

"A CAR WHICH LOVES THE OPEN ROAD AND THRIVES ON THE GENEROUS USE OF THROTTLE AND GEARS": This is how "The Sphere" motoring correspondent describes the Jupiter, here seen on its first appearance in the paddock at Silverstone. The Jowett firm, makers of the Jupiter, has now been in existence half-a-century.

Jowett Superlatives.—It is still difficult for some of us to believe that cars bearing the name Jowett are consistently winning international road races and trials. Let me hasten to explain that this comment is intended as a compliment and is inspired by great affection for a remarkable British firm. Up to the beginning of the last war Jowett Cars, Ltd., of Idle, in Yorkshire, were mainly known for their amazingly reliable and rugged little cars and vans which chugged around with twin-cylinder engines.

Few people expected that this Yorkshire firm would come out, after the war, with a high-grade, modernly-styled saloon—the Javelin—whose "flat four" engine gave such a lively performance, and whose other driving characteristics were so good that it inspired the production of a sports car which won its class in the 1950 and 1951 24-hour road race at Le Mans and in the last Monte Carlo Rally.

I refer to the two/three-seater Jupiter, which uses the same 1½-litre horizontally-opposed engine as the Javelin saloon, and which I was able to try out recently. It is a car which loves the open road and thrives on the generous use of throttle and gears. It is not a town car by any means, for the engine seems to be a little fussy until the needle on the r.p.m. counter gets past the 2,000 mark.

For this reason you have to use bottom and second gears quite a lot in traffic, but I found the steering column gear-change lever easy to use. It does not, however, permit of the snappy use of the gearbox, which is such a joyous feature of some sports cars fitted with central levers in the good old-fashioned way.

In the case of the Jupiter, of course, the lever has been put on the steering column to make it easier to squeeze in an extra passenger.

Design features of the Jupiter include a frame of light, tubular steel and torsion-bar springing at back and front. She holds the road well and corners beautifully. Brakes and headlights are more than adequate for a car whose genuine top speed is about 88 miles an hour, and the steering is light and smooth. With petrol costing nearly 4s. a gallon it is a point very much in the Jupiter's favour that she is economical on fuel. You can rely on at least 25 miles to the gallon, however hard you drive her on a long run.

I tried out the Jupiter on a run to the West Country. It was a tonic ride, mostly with the hood down, and when it started to rain I found the canopy easy to fix and comfortable to ride under, apart from one or two draughts. Wherever I went the sporty lines of the Jupiter were much admired. In planning her attractive shape, however, the designers seem to have assumed that the owners of sports cars never want to carry much luggage with them. Space for baggage on the Jupiter is limited, and it has to be insinuated into the boot through a small aperture behind the squab.

It is jubilee year for Jowett cars. They have gone a long way since the firm was started by two bicycle-making brothers fifty years ago, and I would like, on behalf of readers of THE SPHERE, to wish them well.

The Dewar Trophy.—There could be no more popular winners of the Royal Automobile Club's Dewar Trophy than Jaguar Cars, Ltd.—another independent firm that started in a very small way and has reached a position of eminence in the industry. Mr. William Lyons, chairman and managing director of Jaguars, must be a proud man. For the Dewar Trophy is awarded each year in recognition of "the most outstanding engineering and technical achievement" in the previous twelve months.

You could be excused for assuming that Bill Lyons gets the Dewar Trophy for winning the classic road race at Le Mans this year. For that, of course, was his finest hour (or twenty-four hours!). The trophy is, in fact, awarded for successes achieved under R.A.C. competition rules, so in giving the cup to Mr. Lyons the Club cites the Jaguar victories in the Tourist Trophy race at Dundrod, the International Rally of Great Britain and the B.R.D.C. production car race at Silverstone. It also mentions that a Jaguar set up a new class record by covering 131·83 miles in an hour.

The R.A.C. makes no secret of the fact that it took other Jaguar triumphs into account, including those at Le Mans, in the Alpine Trial and in the Tulip Rally.

Toll of the Roads.—Have you noticed what a bad time motorists have been having lately? They have been shot at, bullied, criticised and harangued in many different quarters, from the pulpit to the Press, from the platform to the pavement. If you believed all you heard and read, you would have a nightmare picture of swarms of drunken drivers deliberately charging across zebra lanes at high speed and mowing down crowds of innocent, unsuspecting children. For goodness' sake let us keep this thing in perspective. The toll of the roads is a terrible thing, and something must be done about it. But it calls for clear, logical thinking. Nothing will be achieved by attempts to pillory one section of road-users.

What critics of the motorist usually overlook is that every motorist is himself (or herself) a pedestrian for long periods every day of his life. For that reason alone it is poppycock to talk about motorists and pedestrians as if they were ranged against each other, like the armies at Agincourt.

I agree there is too much bad driving on the roads of Britain and that serious examples of careless or dangerous driving should be more heavily punished than has sometimes been the case in the past. I also maintain that you see many shocking examples of careless or dangerous *walking* every day.

Much can be done by education to make all classes of road users safety conscious. Excellent work on these lines is being done in the schools, and I am convinced that the average child of ten or eleven is more traffic-conscious than most adults. But there is a large mass of people who seem incapable of understanding that every unit of traffic and every pedestrian is a traffic unit—has duties and obligations to all other road users.

A NEAPOLITAN INVENTOR THINKS HE HAS THE ANSWER TO THE PUNCTURE PROBLEM: His name is Antonio Pieroni and his invention is the Anello Elastico, the elastic ring which he has developed after years of research. This consists of a series of intertwined springs (as shown *on left*), and these, taking the place of an inner-tube, are housed within the outer-tube (as shown *in centre*). The inventor is seen (*on right*) with one of his prototype tyres. The cost of the new tyre would be 25 per cent. above pneumatic tyres, but maintenance savings would be considerable. No decision to manufacture in bulk has yet been made.

CONFUSION FOLLOWS IN THE WAKE OF NEW YORK'S FIRST HEAVY SNOWFALL OF THE YEAR: This is a view of the Grand Central Parkway in Queens, New York, showing some of the many cars which were abandoned or which broke down during the recent heavy snowfall. A motorist is seen trying to push the big car he had earlier left to its fate, while others lie about awaiting their owners.

THE JOYS OF WINTER MOTORING ABROAD

On the Eastern Seaboard of America the First Heavy Snow of Winter Results in Traffic Chaos; In Rome, Ancient Monuments Present New Traffic Problems

BLINDED BY FALLING SNOW, THE TRAFFIC IN A NEWARK, NEW JERSEY, STREET CRAWLS HOMEWARD: "Skid-chains down" was the order of the day as the year's first snow blanketed the city. At the height of the storm, cars, buses and lorries, thickly coated with snow, were almost at a standstill.

THE BLIZZARD CAUSES A TRAFFIC-JAM IN PHILADELPHIA: This six-lane trunk highway, the Roosevelt Boulevard, is one of the city's main traffic arteries. The hundreds of cars seen here had been at a complete standstill for more than twenty minutes when this picture was taken.

TIMES SQUARE, MANHATTAN, DESERTED AFTER THE SNOWSTORM: This is normally the busiest part of New York; so busy that, like Piccadilly Circus, it has earned itself the soubriquet "Cross-roads of the World." Only the weather could alter that, and the recent snow-storm, with its melancholy sequel of slush and mud, frightened off all but a few cars and some of the most intrepid New Yorkers.

A TRAFFIC JAM AT THE PORTA PINCIANA, IN ROME: This part of the ancient Wall of Rome may set the tourist's heart throbbing, but it is a headache for the city's traffic experts. Like other antique parts of the now congested city, it greatly aggravates the problem of dealing with the ever-increasing traffic. Recently it has been suggested that private cars should not be allowed in the centre of Rome at all.

The World of Books—By VERNON FANE

The UNIVERSALITY of ROY CAMPBELL

A Man of Many Accomplishments Whose Autobiography Lives Up to Expectations

MR. ROY CAMPBELL is not only a poet of world-wide distinction, but a soldier and a horse-trader, and not only that, but a literary critic and a radio personality, and not only that, but a traveller and, of all things, a bull-fighter. His lyric verses have captivated me since the day when I first read *Horses on the Camargue* (I quote the title from memory and hope that I may be almost correct), and in his own Elysian field he has scarcely an equal, but he is also a writer of good, springy, terse prose, as he proves with his volume of autobiography, LIGHT ON A DARK HORSE (Hollis and Carter. 18s.).

I recommend this to you if you are tired of the banal or the commonplace either in the matter or the manner of the book, for it is as briskly fresh, as poetic on occasion, and on occasion as startling as one imagines the author himself to be. Mr. Campbell comes from South Africa and, in spite of visits back there, has gone a long way since. As he puts it himself: "As a poor man, I have had to rely on World Wars and even on enemy action with consequent 'survivor's leave' and other such windfalls to enable me to pay my family calls." You may not exactly agree with Mr. Campbell's definition of windfalls, but whether you do or not, you will find here an autobiography of great quality and originality. Incidentally, Mr. Campbell's estimates and descriptions of famous figures are typically incisive and some of them are very funny. The frontispiece is a reproduction of a portrait of the author in 1924 by Augustus John.

Mr. Laurence Irving has written a long biography of his famous grandfather, Sir Henry Irving, and it is perhaps not trivial to remark at this point that one could wish that its more than 700 pages could have been divided and bound into two more easily handled volumes. That criticism apart, I find a great deal to commend in this work which has so obviously been a labour of love. HENRY IRVING (Faber. 50s.)—and the price will give some indication of its size and scope if of nothing else—is the kind of vast biography that is a little overwhelming if taken at one straight run, but which is extremely rewarding if read, and indeed studied, at intervals, and, of course, kept as a work of reference on the English stage of the period as well as on the career of one of our greatest actors. The period was a long as well as a rich one (1838 to 1905), and theatrically speaking marked a complete change in stage technique as well as in the status of actors. From the earlier view of them as rogues and vagabonds they had become, with Queen Victoria's blessing and the first stage knighthood to Irving, recognised members of a regular and worthy profession. The author is able to stress in this connection just how great a part his illustrious grandfather took in this gradual change of values and opinions. The book is well and thoroughly documented, as, I would add for the benefit of keen students, or for those readers who will inevitably be looking through the index to find some mention of their own grandparents.

IVOR — THE STORY OF AN ACHIEVEMENT (W. H. Allen. 22s. 6d.) is a biographical tribute, and again a long one, to the man who was possibly the most popular single figure in our contemporary London theatre. Ivor Novello was not a great actor, a great playwright or a great composer so, might ask a visitor from another continent, what was all the fuss about? It was about a man whose music was whistled and played by hundreds of thousands, whose plays ran for years at the biggest theatres, and whose face was as familiar as that of many of one's personal friends. In fact, a personal feeling, however unjustified by the facts, was what his fans had for Ivor, whether they screamed his name from the gallery or murmured it more decorously in the dressing-room. Whatever one's opinion of his work, which kept its tunefulness from the days of his "Keep the Home Fires Burning," there is no doubt that he was, quite genuinely, a figure to reckon with in any assessment of the theatre and, as Mr. W. Macqueen-Pope shows here, he was also the most likeable of men.

Miss Agnes de Mille, the American choreographer of such shows as *Oklahoma!* and *Brigadoon*, writes her ballet memoirs with DANCE TO THE PIPER (Hamish Hamilton. 18s.). Her writing has all the vigour and attack of her better dances but not by any means their taste, as when she feels impelled to express herself thus on some dance of Pavlova's: "Oh ancient ecstasy, passion beyond promise!" The most interesting part of her autobiography is, of course, the account of her own development, first as a dancer, and then as a choreographer. In this Miss de Mille showed all the single-minded devotion to a purpose of her older colleagues, Ruth St. Denis, Martha Graham and Marie Rambert, though her interpretation of dancing was always different from any of theirs, and more suited to the lusty, modern idiom. Dances arranged by her may not always satisfy or even please the spectator, but one of the secrets of her success is that they will never bore him.

ADVENTURING IN ANTARCTICA: Captain Halvdan, a Norwegian, Captain Guttorm Jakobsen of the *Norsel*, and Captain Rienhold von Essen of the Swedish Army seen together aboard the *Norsel* at Cape Town before leaving for the island of Maudheim. They are members of the Swedish-Norwegian-British Antarctic Expedition. They will relieve others who have been on the island for the last two years. The *Norsel* will make a survey of the Great Barrier Reef in the vicinity of the island to correct charts.

In the Victoria and Albert Museum, of which Mr. James Laver is one of the executives, there is a fine and important collection of theatrical material, and he has been able to draw on that for the 200 illustrations as well as for the source of much of the material in his new book, DRAMA (Studio. 30s.), which is an attempt to put the drama in what he considers to be its true perspective, as something noble and vast. It is a scholarly, but not an abstruse work, and it has been planned and produced with real distinction.

From the theatre to the press is not the wildest of leaps, and next we have Mr. Bernard Falk's amplified and revised autobiography, first published in two volumes and now collected under the single laudatory heading of BOUQUETS FOR FLEET STREET (Hutchinson. 21s.). It is anecdotal, lively and yet kindly and, as before, proves itself a useful guide to the journalism of our days. Northcliffe once divided retired journalists into three classes: those who had been found out, those who had been kicked out, and those who had fallen out from sheer decrepitude. I am happy to report that another category will have to be invented for the sprightly Mr. Falk.

The next two books have the country, the fields and woods of England itself as their inspiration. A WINDOW ON A HILL (Robert Hale. 15s.) is a collection of essays, some of them very brief and all of them full of sound sense and observation, by Mr. Richard Church, who writes with the economy and the grace of the poet, and whose knowledge of country matters is from a lifetime of practical experience, and not from the leaves of old histories and herbals. An enchanting book this, and I hope you will enjoy its diversity as much as I did.

WAGON WHEELS (Harrap. 12s. 6d.) is Mr. Jim Phelan's introduction to the lives of the gypsies, as they exist in the England of our own day and have existed for hundreds of years. In his own words: "The lonely small camp on the edge of a moor, or the painted caravans halted in a green lane—these were ancient five hundred years before Shakespeare was born. But they are still there." As one who has always felt the mathematically exact opposite of a Romany urge, I can still appreciate that this chatty, personal volume will have great charm for those readers to whom the wind on the heath means Romance rather than Rheumatism, and to them I recommend the sincerity of Mr. Phelan's work.

There is just space for me to mention three novels this week which come from English, French, and American sources. First of all, Mr. John Pudney's HERO OF A SUMMER'S DAY (Bodley Head. 11s. 6d.), a story of young people and summer and the up-river reaches of the Thames, with atmosphere conveyed to the reader in writing as light and sure as the strokes of a good water-colourist's brush. Mr. Pudney knows his Thames-side, and we can know it through him, with its backwaters and punts, its locks and its steamers and its irrepressible young people.

Next, Edith de Born's masterly short novel, THE BIDOU INHERITANCE (Chapman and Hall. 10s. 6d.), which, within the author's self-imposed limitations, gave me a great deal of pleasure. It is well constructed, but expressing all the emotions that might be created in a small French town among a closed circle when the reading of a rich man's will is imminent. Recommended to those who do not expect every second French novel to be an hilarious farce.

GOD'S MEN (Methuen. 12s. 6d.) is Miss Pearl Buck's new story of China, covering the period from the Boxer Rebellion of 1900 to the critical struggles of 1951. As always, this author writes with complete authority on her subject, and here traces the far from parallel lives of two American boys, both born into missionary families in Peking, but each working out an opposite destiny in the end. I found Miss Buck's earls and countesses, in the section of the book where the action moves to England, stiff to the point of caricature, by the way, but feel sure that she has dealt more kindly with her own compatriots and with the Chinese whom she admires.

MODERN TRAPPIST, AND SPANISH MYSTIC

A New Volume by Father Thomas Merton

Thomas Merton is an author who has proved himself, this American-New Zealander who joined the Trappists and achieved immediate recognition with his deeply sincere book *Elected Silence*. In his fourth volume, THE ASCENT TO TRUTH (Hollis and Carter. 18s.), Father Merton presents an exposition of the doctrines of St. John of the Cross, the Spanish mystic from Old Castile who became a Carmelite in 1564 and met with such violent opposition in his efforts to introduce the reforms proposed by St. Theresa. John of the Cross, who was beatified in 1674 and canonised in 1721, has often been disregarded because of the lofty, often obscure, symbolism of his prose; but Thomas Merton holds the view that in his works can be found the secret of the mystery of faith. Merton's interpretation is, of course, in part the outcome of his own religious experience. He shows how, even on earth, men may be granted a foretaste of heaven in mystical contemplation. The man of faith, by virtue of his faith, he asserts, is already living in heaven. Thomas Merton writes with a fine facility, and quotes with felicity, and of his own strong assurance there is no doubt. Upon the question of mystical experience he is as reserved as his mentor, St. John of the Cross, indicating that the persistent seeker after visions and assurances is treading a false trail; no less false, perhaps, than the trail of the persistent penance doer. *The Ascent to Truth* is the product of a deeply intelligent and questing mind, and the fact that it bears the imprimatur of Francis Cardinal Spellman, Archbishop of New York, an indication that here is a document free of Roman Catholic doctrinal error, will commend it within the Roman Catholic faith; but this should be no bar to wider reading. Here is a lasting contribution to Christian thought which men and women of all shades of opinion will wish to read.

Sven Hedin, Swedish explorer and author, who holds a British knighthood and a Swedish peerage and has often shown in his long career a partiality for the German way of life, had exceptional opportunities in the Second World War for meeting and talking with Hitler and the other leaders of the Third Reich. In SVEN HEDIN'S GERMAN DIARY, 1935-1942 (Euphorion Books. 15s.), the details of some of those talks are recorded, and Franklin Roosevelt, it seems, emerges as the main villain of the piece. The real value of these documents, perhaps, lies in the background impression they give, showing Goering strutting amid the masterpieces and luxuries of Karinhall, oblivious of the shortages among his own people, and Hitler, the corporal with a fatal flair for strategy, making the irrevocable decisions which brought Europe down about his head.

At one time Napoleon was the favourite subject of biographers, but it seems probable that in the years to come books upon the colossus who bestrode Europe will be matched by the number of books on Gandhi. Reginald Reynolds, who as a young man acted as a special envoy for the Mahatma to the Viceroy of India, is the author of TO LIVE IN MANKIND (André Deutsch. 15s.), which he describes as "A Quest for Gandhi." The main theme is really Gandhi's influence upon the life of India. Among other things, Mr. Reynolds gives a full account of basic education, which was one of Gandhi's dearest projects.

John Blofield, who has lived for the past seventeen years in China, and has travelled extensively through fifteen of its eighteen provinces, describes in RED CHINA IN PERSPECTIVE (Allan Wingate. 12s. 6d.), the present developments in this vast land in relation to the immense sweep of Chinese history. He believes that the sooner China is accorded a place in the United Nations, the sooner will she grasp the opportunity of standing on her own feet, independent of Stalinism.

THACKERAY'S DAUGHTER (Euphorion Books. 12s. 6d.), the recollections of Anne Thackeray Ritchie compiled by Hester Thackeray Fuller and Violet Hammersley, is a literary fragment of much interest. Thackeray's elder daughter met most of the great celebrities of her day, many of them during her childhood in her father's house, and later she wrote about them with wit and shrewdness.

The latest addition to the uniform edition of the works of Colette is CREATURES GREAT AND SMALL (Secker and Warburg. 12s. 6d.). Colette's passionate love for animals here finds expression in a series of wonderful conversations, notably between Toby-Dog and Kiki-the-Demure.

In ROTTING HILL (Methuen. 14s.) Wyndham Lewis has written a series of stories strong in political flavour and full of characteristic humour. Only the most broad-minded left-wing politicians will see the humour.

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Mountaineering in Britain

(*Concluded from page 535*)

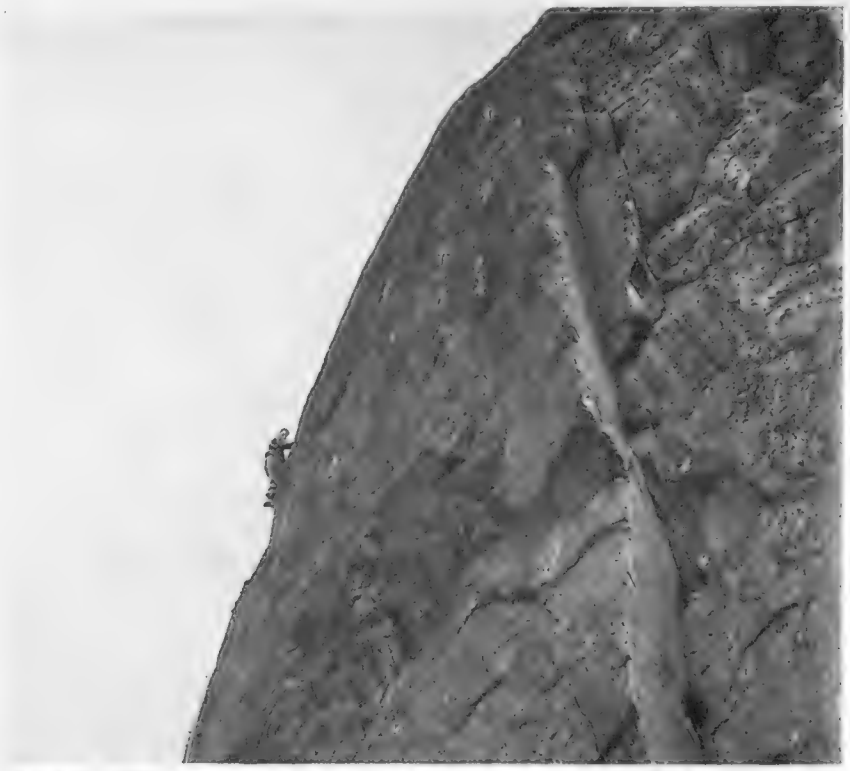
road, and the Idwal Slabs, a whole hillside "frozen into stone" at a pleasant angle, will probably be chosen for a first day. And for off-days there are delightful expeditions which are just a little harder than mere walking; the round of the Snowdon summits, for instance, with the knife-edged ridge of Crib Goch for a tit-bit, or the Bristly Ridge of the Glyder, followed by the North Ridge of Tryfan.

In the Lakes, Wasdalehead, a mere hamlet, but with several hospitable farm-houses, makes the best of all centres. Borrowdale, Langdale and Coniston run it close. Roads are not driven yet (one hopes they never will be) through all the high valleys, as in Wales; one must therefore be prepared to make more use of one's legs—a fact deplored by advanced rock climbers, who invariably detest walking. For a start, the Napes Crags on Great Gable have several relatively easy routes, and delightfully sunny crags they are, high up on the mountain and south-facing. From them one can see the Isle of Man on a clear day.

Climbers from the industrial towns of the North can snatch an afternoon's sport on one of the many gritstone outcrops on the Pennine moors, like Laddow or Castle Naze. The routes are mostly very hard ("If you can climb gritstone you can climb anything"), and the novice should see that he is well anchored to some member of the local climbing club, who will be sure to know their intricacies by heart.

North of the Border there are no professionals. The actual standard of rock-climbing is very often easier, but the going will be rougher and the day longer. Other writers in this special SPHERE feature are dwelling on this far-northern aspect of mountaineering in Britain, so I shall not enlarge upon it save to say that in Scotland are what are, to my mind, the most fascinating mountains in Britain, the Coolins of Skye. They are a race of hills apart, differing from all others geographically, geologically (they are mainly composed of gabbro, a crystalline dark-red rock which takes the skin off one's fingers like sandpaper), and in sheer beauty and atmosphere.

A holiday on the Coolins sums up the best of the pleasures British mountains have to give: excitement very mildly spiced with danger, a great sense of space and height without the effort of actually going higher, and an entrancing view.



LOOKING UP THE SHEER FACE OF TRYFAN: A member of an R.A.F. Rescue team on one of the more formidable climbs in North Wales. Tryfan rises to 3,010 ft.

Ridge-Walking Upon Arran

(*Concluded from page 536*)

If we now retrace our steps to North Goatfell and take the ridge to The Saddle we shall find ourselves at the head of Glen Sannox and Glen Rosa, Cir Mhór towering above us in a steeple of monolithic granite which passes southwards into a grassy concavity rimmed by another slabby precipice of a milder mien. The way up the concavity is a grind, 1,200 ft. in vertical drop and some 45 degs. in inclination, though otherwise of no account to an experienced mountaineer. If the ridge is followed there is a climbing pitch or two below the summit; but the usual path crosses a gully below it over to a nick between Cir Mhór and the Rosa Pinnacle, which can be climbed by a short chimney, and gains the former over easy ground.

On Caisteal Abhail we are confronted with three ridges. The north-west one rings the bouldery hollow of Garbh-Choire, linking up with the rock scarps of Creag Dubh in the north, thence with the Slabs of Sail an Im and the undercut plateau of An Tunna, which stands sentinel above the round-the-island road at Boguillie. This is the usual approach to the peak from Lochranza. Northwards a short, square-hewn ridge descends into North Glen Sannox. But it is the north-east ridge that has most to offer.

Narrow and rocky, it soon brings us to Ceum na Caillich, the Carlin's Leap, that gap, 150 ft. deep, which rises like half-opened scissors above the head of Glen Sannox. A gritty pathway creeps among the rocks, easily, down to where the disintegrating whin dyke has eaten into the granite mass. The east pinnacle of the Leap forms a short rock-climb with one awkward pitch, where one must slip up or down an uncomfortably inclined slab, dangerous in wet weather.

Beyond the Leap, the ridge is a walk, which soon leads to Suidhe Fheargais, or Fergus's Seat (2,081 ft.), whence King Fergus I of Scotland is said once to have surveyed the scene, and so to Sannox village.

A'Chir and Beinn a'Chliabhain (Khlieven), jocularly referred to as "Chilblain," flank Glen Rosa in the west. The latter is a handsome peak, famed for views, but of little climbing interest. A'Chir, on the other hand, is a climber's mountain. The summit can be gained easily from Glen Rosa by a subsidiary shoulder, but the ridge itself contains a number of chunky pitches which cannot be by-passed.

Heavy falls of snow are comparatively rare in Arran, but some winters, as e.g. 1950-51, the snow maintains itself for many weeks, and in February or March sunny weather may combine with a reasonable approach to Alpine conditions. The early part of the winter is not to be recommended; it is generally wet and windy. The best mountaineering months are from March to June. September and October are also good at times and the colouring is then at its finest. July and August, on the other hand, though the height of the official season, are out of favour with the deities of British weather.

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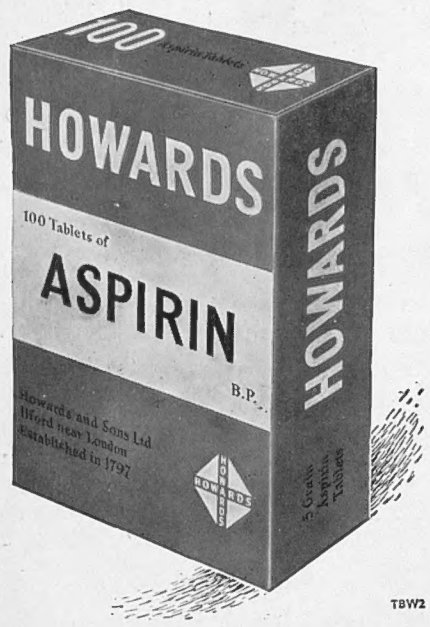

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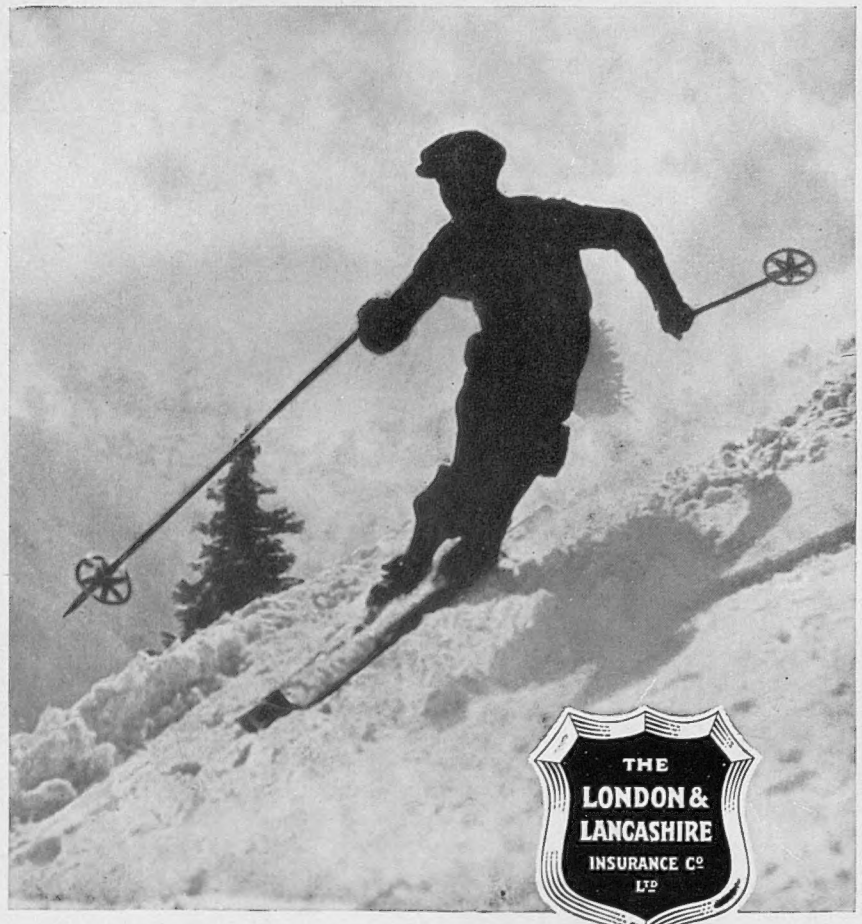

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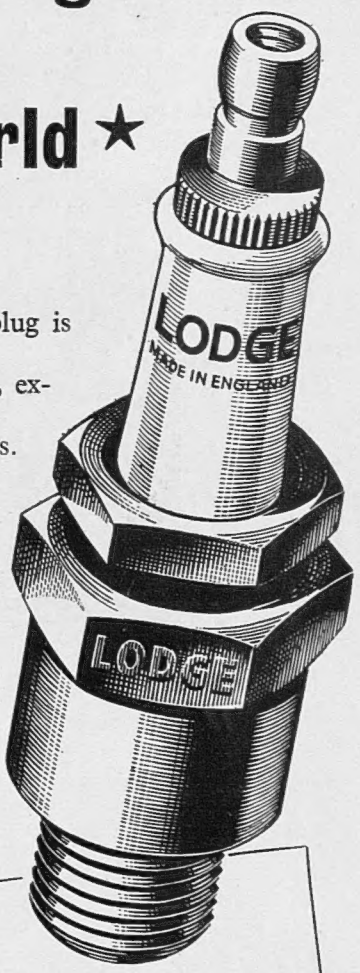

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